MALAYAN BLATTIDÆ.

By R. Hanitsch, Ph.D.

Director, Raffles Museum, Singapore.

(With 7 coloured plates).

INTRODUCTION.

The following pages are in the main a compilation of the original descriptions of the Malayan Cockroaches scattered through more than fifty different publications. Wherever those descriptions seemed adequate, they have been left unaltered. However, in a considerable number of cases revised descriptions, chiefly by Brunner von Wattenwyl and R. Shelford, have been substituted.

The paper also contains the descriptions of nine species hitherto not recorded, viz:

Pseudothyrsocera moultoni. n.sp. Sarawak.
Phyllodromia 4-punctata, n.sp. Selangor.
Rhabdoblatta obtecta, n.sp. Singapore.
Epilampra circumdata, n.sp. Singapore; Selangor: Perak.
Epilampra dytiscoides, n.sp. Selangor.
Periplaneta robinsoni, n.sp. Sumatra.
Methana semi-marginalis, n.sp. Sarawak.
Corydia marcelli, n.sp. Perak; Selangor; Sarawak.
Corydia forceps, n.sp. Selangor.

The idea of working up the Malayan Blattidæ as it is done in the following pages, occurred to me during my leave in Europe in the year 1910, when I spent about two weeks in going over the collection of Blattidæ and other Orthoptera in the Hope Department of the University Museum, Oxford. I had a more or less personal interest in that collection, as it had only recently been re-arranged by my friend Mr. R. Shelford, formerly Curator of the Sarawak Museum, whose death in 1912 cut short the commencement of a brilliant career.

I continued my work in Oxford during my last leave in 1914, chiefly from the middle of May to the end of September, examining the Malayan species and collecting together the scattered literature on the subject.

The shortcomings of a work like this will, of course, be evident to every one who may in future use it. Though, thanks to Brunner von Wattenwyl's 'Nouveau Système des Blattaires' and his 'Révision du Système des Orthoptères,' to Kirby's 'Synonymic

Catalogue of the Orthoptera' and especially to Shelford's work and his numerous publications I hope in most cases to have been successful in having avoided the pitfalls of synonymy, still the lack of uniformity in the descriptions by so many different authors (Burmeister, Serville, Saussure, Brunner von Wattenwyl, F. Walker, Stål, Krauss, Kirby, Rehn, Shelford and others) must be a serious drawback. To make the descriptions uniform, would, of course, necessitate re-examination of the various types, many of which are, besides in Oxford and the British Museum, preserved in Vienna, Paris, Stockholm and other places, and would require considerably more leisure and facilities than I have at my disposal.

The material I have had the opportunity of examining has been, besides the collection in the Hope Department, Oxford, the following: the collection in the British Museum; part of the Sarawak Museum collection, kindly placed at my disposal by Mr. J. C. Moulton, Curator of the Museum there: a collection from Banting, Sarawak, brought together by the Rev. G. Dexter Allen, M.A.; a collection from Sumatra, made by Mr. H. C. Robinson, Director of the F. M. S. Museums, and Mr. C. Boden Kloss, Assistant Director; and finally the material in the Raffles Museum, collected by myself during the last twenty years in various parts of the Malay Peninsula, Borneo, Java and Christmas Island. Specially fruitful were a few weeks I spent quite recently (April 1915) on Bukit Kutu, near Kuala Kubu, Selangor.

The Malayan region is here taken to include the Malay Peninsula as far as the Isthmus of Kra, Sumatra, Java, Borneo and adjacent islands. The Philippines, Celebes, etc. are not included.

The figures illustrating this paper were, with one exception, all drawn by Mr. Valentine Knight, Assistant Curator in the Raffles Museum, and I wish to take this opportunity of thanking him most heartily for the excellent way in which he has performed the work. My best thanks are also due to Mr. Moulton, the Rev. G. Dexter Allen, Mr. Robinson and Mr. Kloss for the loan of the material referred to above, and especially to Professor Poulton, F.R.S., for his kindness in allowing me to study for so many months in the Hope Department of the Oxford Museum and for giving me all possible facilities in preparing this work.

I am also indebted to Mr. Hamm, of the Hope Department, for kind help with literature after my return to Singapore.

Systematic List of the Sub-families, Genera and Species of the Malayan Blattidæ.

		Page	Plate
Sub-family 1. ECTOBINAE.			
Genus *Theganopteryx*, Brunner	...		
Theganopteryx apicigera, Walker ...	...	26	
Genus *Hemithyrsocera*, Saussure	...		
Hemithyrsocera histrio, Burmeister ...	...	27	III, fig 13
,, *lateralis*, Walker ...	...	28	
,, *palliata*, Fabricius ...	...	28	
,, *soror*, Brunner ...	...	29	
,, *tessellata*, Rehn ...	...	29	
Genus *Anaplecta*, Burmeister	...		
Anaplecta obscura, Shelford ...	...	31	
,, *malayensis*, Shelford ...	...	31	
,, *borneensis*, Shelford ...	...	32	
,, *javanica*, Saussure ...	...	32	
Sub-family 2. PHYLLODROMIINAE.			
Genus *Pseudothyrsocera*, Shelford	...		
Pseudothyrsocera scutigera, Walker ...	...	34	
,, *pica*, Walker ...	...	34	VII, fig. 37
,, *ruficollis*, Shelford ...	...	35	VII, fig. 36
,, *montana*, Shelford ...	...	35	
,, *bicolor*, Shelford ...	...	36	
,, *moultoni*, n. sp. ...	...	36	III, fig. 16
Genus *Ischnoptera*, Burmeister	...		
Ischnoptera reversa, Walker ...	...	37	
,, *excavata*, Shelford ...	...	38	
,, *cavernicola*, Shelford ...	...	38	
,, *mentis* Shelford ...	...	39	
,, *ridleyi*, Shelford ...	...	39	
Genus *Phyllodromia*, Serville ...	...		
Phyllodromia bivittata, Serville ...	...	40	
,, *trianguliter-vittata*, Brunner	...	41	
,, *latius vittata*, Brunner	...	42	
,, *longe-alata* Brunner ...	...	42	
,, *funebris*, Walker ...	...	43	
,, *hamifera*, Walker ...	...	43	III, fig. 14
,, *ruficeps*, Kirby ...	...	44	
,, *aliena*, Brunner ...	...	44	
,, *contingens*, Walker ...	...	45	

		Page	Plate
Phyllodromia	*germanica*, Linné	45	
,,	*irreguliter-vittata*, Brunner ...	46	
,,	*secura*, Krauss	46	
,,	*virescens*, Walker	47	
,,	*laterifera*, Walker	48	
,,	*variegata*, Brunner	48	
,,	*puncticollis*, Brunner	49	
,,	*notulata*, Stål	49	I, fig. 2
,,	*polygrapha*, Walker	49	
,,	*anceps*, Krauss	50	
,,	*obtusifrons*, Walker	51	
,,	*nebulosa*, Shelford	51	
,,	*megaspila*, Walker	52	
,,	*marmorata*, Walker	53	
,,	*picturata*, Shelford	54	
,,	*hewitti*, Shelford	54	
,,	*elegans*, Walker	55	
,,	*picteti*, Fritze	55	
,,	*supellectilium*, Serville	56	
,,	*nimbata*, Shelford	57	
,,	*4-punctata*, n. sp.	57	I, fig. 1
	Genus *Duryodana*, Kirby		
Duryodana palpalis, Walker	... ...	58	
	Genus *Pseudophyllodromia*, Brunner ...		
Pseudophyllodromia pulcherrima, Shelford	...	59	III, fig. 15
,,	*laticeps*, Walker	60	I, fig. 3
	Genus *Ceratinoptera*, Brunner		
Ceratinoptera sundaica Fritze	... ...	62	
,,	*fulva*, Brunner	62	
	Genus *Allacta*, Saussure and Zehntner ...		
Allacta parva, Shelford	... ..	63	

Sub-family 3. NYCTIBORINAE.

None.

Sub-family 4. EPILAMPRINAE.

	Genus *Phlebonotus*, Saussure		
Phlebonotus pallens, Serville	... ...	64	
	Genus *Morphna*, Shelford		
Morphna maculata, Brunner	... ...	65	IV, fig. 19
,,	*badia*, Brunner	66	IV, fig. 20
	Genus *Homalopteryx*, Brunner		
Homalopteryx adusta, Walker	... ...	67	
,,	*major*, Saussure	67	
	Genus *Compsolampra*, Saussure		
Compsolampra liturata, Serville	... ...	68	
	Genus *Apsidopis*, Saussure		
Apsidopis wallacei, Shelford	... ...	69	
,,	*oxyptera*, Walker	70	

	Page	Plate
Apsidopis cyclops, Saussure	71	
Genus *Pseudophoraspis*, Kirby		
Pseudophoraspis nebulosa, Burmeister	72	I, fig. 4
,, *miranda*, Shelford	73	
Genus *Rhabdoblatta*, Kirby		
Rhabdoblatta buqueti, Serville	73	
,, *javanica*, Saussure	74	
,, *pfeiferæ*, Brunner	75	
,, *structilis*, Rehn	75	
,, *parvicollis*, Walker	76	
,, *procera*, Brunner	77	
,, *obtecta*, n. sp.	77	III, fig. 17
Genus *Epilampra*, Burmeister		
Epilampra quadrinotata, Walker	78	
,, *plena*, Walker	79	
,, *puncticollis*, Walker	80	
,, *varia*, Walker	81	
,, *imitans*, Brunner	82	
,, *dutiscoides*, n. sp.	82	VII, fig. 35
,, *saravacensis*, Shelford	83	
,, *goliath*, Shelford	83	
,, *flavomarginata*, Shelford	84	
,, *circumdata*, n. sp.	84	I, fig. 5
,, *inclarata*, Walker	85	
,, *lurida*, Burmeister	85	
,, *ridleyi*, Kirby	86	
,, *deflexa*, Saussure	86	
,, *geminata*, Brunner	87	
,, *albina*, Saussure	88	
,, *lævicollis*, Saussure	89	
,, *trongana*, Rehn	89	
,, *moloch*, Rehn	91	
Genus *Rhicnoda*, Brunner		
Rhicnoda rugosa, Brunner	93	III, fig. 18
,, *natatrix*, Shelford	93	
,, *spinulosa*, Brunner	94	
,, *desidiosa*, Rehn	94	
Genus *Calolampra*, Saussure		
Calolampra pedisequa, Rehn	96	

Sub-family 5.

BLATTINAE (= PERIPLANETINAE).

Genus *Platyzosteria*, Brunner		
Platyzosteria soror, Brunner	98	V, fig. 29
Genus *Cutilia*, Stål		
Cutilia nitida, Brunner	99	
Genus *Methana*, Stål		

	Page	Plate
Methana magna, Shelford	100	
„ *pallipalpis*, Serville	100	
„ *hosei*, Shelford	101	
„ *semimarginalis*, n. sp.	101	V, fig. 28
Genus *Dorylæa*, Stål		
Dorylæa flavicincta, De Haan	102	
Genus *Blatta*, Linné		
Blatta orientalis, L.	103	
„ *concinna*, De Haan	104	I, fig. 6
Genus *Stylopyga*, Fischer von Waldheim		
Stylopyga rhombifolia, Stoll	105	V, fig. 24
„ *picea*, Brunner	106	
„ *semoni*, Krauss	106	
„ *proposita*, Shelford	107	
Genus *Periplaneta*, Burmeister		
Periplaneta americana, L.	108	IV, fig. 21
„ *australasiæ*, Fabricius	108	IV, fig. 22
„ *crassa*, Karny	109	
„ *lata*, Herbst	109	
„ *spinosostylata*, Krauss	109	
„ *malaica*, Karny	110	
„ *regina*, Saussure	110	
„ *truncata*, Krauss	111	
„ *robinsoni*, n. sp.	111	IV, fig. 23
Genus *Homalosilpha*, Stål		
Homalosilpha ustulata, Burmeister	112	VII, fig. 38
„ *decorata*, Serville	112	
Genus *Eroblatta* Shelford		
Eroblatta borneensis, Shelford	113	
Genus *Thyrsocera*, Burmeister		
Thyrsocera spectabilis, Burmeister	114	
„ *speciosum*, Walker	114	
Genus *Miroblatta*, Shelford		
Miroblatta petrophila, Shelford	115	
Genus *Archiblatta*, Vollenhoven ...		
Archiblatta hevenii, Vollenhoven	116	V, fig. 25
Genus *Catara*, Walker		
Catara rugosicollis, Brunner ...	117	V, figs. 26 & 27
„ *minor*, Krauss	118	

Sub-family 6. PANCHLORINAE.

Genus *Rhyparobia* Krauss		
Rhyparobia maderæ, Fabricius	120	
Genus *Leucophæa*, Brunner		
Leucophæa surinamensis, L.	121	II, figs. 7 & 8
„ *striata*, Kirby	122	
„ *nigra*, Brunner	122	
Genus *Nauphæta*, Burmeister		

	Page	Plate
Nauphœta cinerea, Olivier	123	II, fig. 9

Sub-family 7. BLABERINAE.

None.

Sub-family 8. CORYDINAE.

Genus *Corydia*, Serville		
Corydia petiveriana, L.	124	
,, *coerulea*, Shelford	125	
,, *forceps*, n. sp. ...	125	VII, fig. 41
,, *maxwelli*, n. sp.	126	II, fig. 10
Genus *Homopteroidea*, Shelford		
Homopteroidea nigra, Shelford	127	
Genus *Holocompsa*, Burmeister		
Holocompsa debilis, Walker	128	
Genus *Polyphaga*, Brullé		
Polyphaga sumatrensis, Shelford	128	
Genus *Dyscologamia*, Saussure		
Dyscologamia capucina, Brunner	129	
,, *cesticulata*, Saussure	130	VI, fig. 30
,, *pilosa*, Walker	131	

Sub-family 9. OXYHALOINAE.

Genus *Diploptera*, Saussure		
Diploptera dytiscoides, Serville	133	VI, fig. 31
Genus *Chorisoneura*, Brunner.		
Chorisoneura lutinitrea, Walker	134	
Genus *Arcolaria*, Fieber		
Arcolaria signata, Shelford	135	
,, *sumatrana*, Shelford	135	
,, *fieberi*, Brunner	136	
,, *consocia*, Walker	136	

Sub-family 10. PERISPHAERINAE.

Genus *Paranauphœta*, Brunner		
Paranauphoeta circumdata, De Haan	138	
,, *basalis*, Serville	138	II, fig. 11
,, *brunneri*, Shelford	139	
,, *lyrata*, Burmeister	139	VI, fig. 32
,, *bilunata*, De Haan	140	
,, *javanica*, Saussure	140	
,, *atra*, Shelford	140	
Genus *Glyptopeltis*, Saussure		
Glyptopeltis coulaniana, Saussure	141	
,, *biguttata*, Saussure	141	
Genus *Perispheria*, Serville		
Perisphœria armadillo, Serville	142	VII, fig. 39

	Page	Plate
Perisphæria glomeriformis, Lucas ...	142	VII, fig. 40
„ *lucasiana*, Saussure and Zehntner ...	143	
Genus *Pseudoglomeris* Brunner ...	...	
Pseudoglomeris flavicornis, Burmeister ...	... 143	
„ *flexicollis*, Walker ...	... 144	
Sub-family 11. PANESTHINAE.		
Genus *Salganea*, Stål ...	...	
Salganea morio, Burmeister ...	... 145	
„ *rugulata*, Saussure ...	... 146	
Genus *Panesthia*, Serville ...	...	
Panesthia javanica, Serville ...	... 147	VI, fig. 34
„ *ruficeps*, Kirby ...	... 148	
„ *angustipennis*, Illiger ...	... 149	
„ *mandarinea*, Saussure ...	... 149	VI, fig. 33
„ *biglumis*, Saussure ...	... 150	
„ *polita*, Krauss ...	... 151	
„ *ferruginipes*, Brunner ...	... 152	
„ *wallacei*, Wood-Mason ..	.. 152	II, fig. 12
„ *hilaris*, Kirby ...	... 153	
„ *transversa*, Burmeister ...	... 154	
„ *ornata*, Saussure ...	... 154	
„ *sinuata*, Saussure ...	... 155	
„ *bramina*, Saussure ..	... 156	
Genus *Miopanesthia*, Saussure ...	...	
Miopanesthia stenotarsis, Saussure ...	... 157	
„ *discoidalis*, Saussure ...	... 157	
Genus *Mylacrina*, Kirby ...	...	
Mylacrina wrayi, Kirby ...	.. 158	

CLASSIFICATION.

Brunner von Wattenwyl divides the Blattidæ into eleven sub-families which have been accepted by most subsequent writers, viz. (1) *Ectobiinæ*, (2) *Phyllodromiinæ*, (3) *Nyctiborinæ*, (4) *Epilamprinæ*, (5) *Blattinæ* (= *Periplanetinæ*), (6) *Panchlorinæ*, (7) *Blaberinæ*, (8) *Corydiinæ*, (9) *Oxyhaloinæ*, (10) *Perisphærinæ*, and (11) *Panesthinæ*. Nine out of these sub-families are represented in the Malayan Region, whilst two of them, the *Nyctiborinæ* and the *Blaberinæ*, are restricted to the New World. By omitting these two American sub-families, Brunner's key to the *Blattidæ* (see "Révision du Système des Orthoptères," 1893, pp. 10-12) which has been adopted without alteration by Walker (Supplement to the Catalogue of the Blattariæ, 1871, p. 1), by D. Sharp (Insects, part 1, pp. 240-1, in "Cambridge Natural History," Vol. V, 1895), and Shelford (Genera Insectorum, fasc. 55, p. 5, 1907) is as follows:

Key to the Malayan Subfamilies of the Blattidæ.

1. Femora spined beneath.

2. Last ventral segment of the female large, without valves.

3. Supra-anal lamina of both sexes usually transverse, narrow. Wings when present with an apical field, ulnar vein simple or bifurcate. Posterior femora usually sparsely armed with spines beneath. 1. Sub-fam. *Ectobinae.*

3¹. Supra-anal lamina of both sexes more or less produced, triangular or emarginate. Wings when present with or without triangular apical field, ulnar vein ramose. Posterior femora usually strongly spined beneath.

4. Supra-anal lamina of both sexes triangular, entire. Cerci projecting considerably beyond this lamina.
2. Sub-fam. *Phyllodromiinae.*

4¹. Supra-anal lamina of the male more or less quadrate, with obtuse angles; of the female broadly rounded or lobate. Cerci not projecting beyond this lamina. Tarsi with distinct pulvilli. The ulnar vein of the wings emitting parallel branches towards the dividing vein.
4. Sub-fam. *Epilamprinae.*

2¹. Last ventral abdominal segment of the female provided with valves.
5. Sub-fam. *Blattinae* (= *Periplanetinae*).

1¹. Femora unarmed beneath (a few exceptions).

2. Supra-anal lamina of both sexes more or less produced, its posterior margin notched.
3. Claws with a distinct arolium. 6. Sub-fam. *Panchlorinae.*
3¹. Claws without or with a minute arolium.
8. Sub-fam. *Corydinae.*

2¹. Supra-anal lamina of both sexes short, transverse, its posterior margin straight or rounded.

3. Sub-genital lamina of the male somewhat produced, furnished with a single style. Claws with a distinct arolium (except in the genus *Paranauphoeta*).

4. Anterior part of the wings pointed, or the wings with much produced apical field, or wings twice as long as elytra, folded in repose. 9. Sub-fam. *Oxyhaloinae.*

4¹. Anterior part of the wing rounded, with no apical field.
10. Sub-fam. *Perisphaerinae.*

3¹. Sub-genital lamina of the male very small, with no styles. Claws with no arolia. 11. Sub-fam. *Panesthinae.*

Sub-family 1: ECTOBINAE.

(Shelford, Genera Insectorum, fasc. 55, p. 6).

Antennæ setaceous or plumose. Tegmina of horny texture or coriaceous, fully developed, scale-like or absent. Wings, when present, with prominent triangular apical field or with a large

reflected and folded apical area, the ulnar vein simple or bifureate.* Legs slender, femora usually sparsely armed beneath. Supra-anal lamina of both sexes various in shape, but typically narrow and transverse. Ootheca with a longitudinal crest and before deposition carried with the crest uppermost and the eggs disposed vertically.

Key to the Malayan Genera.

1. **Wings with triangular apical field.**
   2. Antennæ setaceous, posterior ulnar vein of tegmina flexuose. Genus *Theganopteryx*, Brunner.
   2¹. Antennæ more or less plumose, posterior ulnar vein of tegmina angulate. Genus *Hemithyrsocera*, Saussure.

1¹. Wings with large reflected apical area. Genus *Anaplecta*, Burmeister.

Genus ***THEGANOPTERYX,*** Brunner von Wattenwyl.

Brunner, Nouveau Système des Blattaires, p. 53. (1865).
Shelford, Genera Insectorum, fasc. 55, p. 7. (1907).

Allied to *Ectobia*, Westwood, but the radial and ulnar veins of the tegmina separate; triangular apical field of the wings generally smaller. Ulnar vein of the wings simple or bifurcate. Femora with numerous spines. Supra-anal lamina transverse or produced and triangular. Sub-genital lamina of the male with or without styles.

Theganopteryx apicigera, Walker.

Blatta apicigera, Walk. Cat. Blatt. B. M. p. 227 (1868).
Phyllodromia apicigera, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).
Theganopteryx apicigera, Shelford. T. E. S. London, 1906, p. 235; Gen. Ins. fasc. 55, p. 7 (1907).

Shelford's revised description is as follows:

♂ and ♀. Rufo-testaceous or flavo-testaceous. Head, antennæ, legs and cerci fusco-castaneous; abdomen testaceous above, darker below. Pronotum trapezoidal, sides not deflexed, with hyaline lateral margins. Tegmina with the apices fuscous, the part of the right tegmen overlapped by the left, hyaline, twelve costal veins, anterior ulnar vein quadri-ramose, posterior ulnar vein simple. Wings hyaline, apex infuscated, marginal field flavo-testaceous, ten to eleven costal veins, their extremities swollen, median vein simple, ulnar vein bifurcate, first axillary vein tri-ramose, triangular apical field conspicuous, but not projecting beyond the anterior part of the wing. Anterior femora not spined beneath, mid-and posterior femora with two or three spines only on each margin beneath; formula of apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{1}$; no geniculer spine on anterior femora. Supra-anal lamina of male short, rounded, of female slightly produced; sub-genital lamina of male ample, with two styles. Ootheca with a longitudinal crest and carried with the crest uppermost, so that the eggs are vertically disposed. Cerci elongate.

*In the genus *Anaplectoidea*, Shelford, from Celebes, the ulnar vein is ramose.

Type (♀) Total length 11 mm.; length of tegmina 9.5 mm.
♂ „ „ 9 mm.; „ „ 8 mm.
♀ „ „ 11 to 12 mm.; „ „ 9 to 10 mm.

Hab: Java (Wallace-Type); Sumatra (Weyers); Sarawak, Borneo (Shelford). Nine examples (Oxford Museum).

The position of the ootheca when carried by the female before deposition is not a character of sub-family importance; in all the Ectobiinæ the ootheca is carried in the way described above, but it is so carried also by *Ellipsidium* and some species even of *Phyllodromia*.

Genus ***HEMITHYRSOCERA,*** Saussure.

Saussure, Soc. Ent. Zurich, Vol. VIII, p. 57 (1893).
Shelford, Gen. Ins. fasc. 55, p. 8 (1907).

Antennæ more or less incrassated and pilose. Anterior ulnar vein of the tegmina bifurcated, branches of posterior ulnar vein angulate. Ulnar vein of the wings simple or bifurcate, a conspicuous triangular apical field. Femora strongly spined in some species. Supra-anal lamina more or less produced and triangular.

Hemithyrsocera histrio, Burmeister. (Plate III, fig. 13).

Thyrsocera histrio, Burm. Handb. Ent. Vol. II, p. 449 (1838).
Blatta lateralis, Serville. Hist. Ins. Orth. p. 107 (1839).
Phyllodromia inversa, Brunner. Syst. Blatt. p. 96 (1865).
Pseudomops fissa, Walker. Cat. Blatt. B. M. p. 213 (1868).
Theganopteryx jucunda, Saussure. Mém. Soc. Sc. Phys. Nat. Genève. Vol. XX, p. 232 (1869).
Thyrsocera lineaticollis, Bolivar. An. Soc. Esp. Hist. Nat. Vol. XIX, p. 302 (1890).
Thyrsocera fissa, Kirby. Syn. Cat. Orth. Vol. I, p. 78 (1904).
Thyrsocera histrio, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 545 (1904).
Hemithyrsocera histrio, Shelford. Gen. Ins. fasc. 55, p. 8 (1907).

Corpore nigro, segmentis ventralibus, pronoto elytrisque albo-marginatis; antennis albo-annulatis; pedibus variegatis, femoribus albis, genibus nigris, tibiis, tarsis fronteque rufo-flavis. Long. corp. 6‴ (=12·7 mm.). Java.

Brunner von Wattenwyl's description of his *Phyllodromia inversa* which, however, was based on a mutilated specimen, is as follows:

Fusco-castanea. Pronoto disco fusco, margine laterali et postico, atque lineâ mediâ marginem posticum non attingente, flavis. Elytris castaneis, margine toto antico flavo. Sexus?—Java.

Long.	
pronoti	3 mm.
pron. transv.	3·5 mm.
elytrorum	13 mm.

Hab: Java (Burmeister and Brunner); Sumatra (Bolivar and Rehn); Borneo (Oxford Museum); Penang (Shelford); Celebes (Shelford). The Raffles Museum contains specimens from Singapore (Bukit Timah and Selitar), Relau (Johore) and Tras (Pahang).

Hemithyrsocera lateralis, Walker.

Ellipsidium laterale, Walker. Cat. Blatt. B. M. p. 213 (1868).
Thyrsocera major, Brunner. Ann. Mus. Genova, (2), Vol. XIII, p. 22, pl. I, fig. 7 (1893).
Hemithyrsocera lateralis, Kirby. Syn. Cat. Orth. Vol. I, p. 77 (1904).
Hemithyrsocera lateralis, Shelford. Gen. Ins. fasc. 55, p. 8, pl. I, fig. 2 (1907).

Brunner's description of his *Thyrsocera major* is as follows:

Pronotum circumcirca margine aurantiaco circumdatum. Elytra atra, campo mediastino toto necnon vitta, a margine antico usque ad duas tertias partes disci extensa, aurantiacis. Alæ atræ, margine antico angustissime pallido, vena ulnari uniramosa. Pedes atri, coxis margine antico pallido. Abdomen atrum, segmentis dorsalibus tribus primis in angulis lateralibus, necnon segmentis ventralibus omnibus in margine postico pallidis. Lamina supraanalis ♀ rotundata, emarginata, ♀.—Pegu.

long. corporis ♀	14 mm.
„ pronoti	4·5 mm.
lat. pronoti	5 mm.
long. elytrorum	14 mm.

Hab: Siam, Hindostan, Burma (Walker); Pegu (Brunner); Selangor (Oxford Museum, collected by H. C. Pratt in 1907); Port Dickson, Negri Sembilan (Oxford Museum, collected by G. Meade-Waldo in 1908).

Hemithyrsocera palliata, Fabricius.

Blatta palliata, Fabr. Ent. Syst. Suppl. p. 186 (1798).
Thyrsocera nigra, Brunner. Syst. Blatt. p. 120 (1865); Ann. Mus. Genova, (2), Vol. XIII, p. 21 (1893).
Ellipsidium subcinctum, Walker. Cat. Blatt. B. M. p. 85 (1868).
Theganopteryx indica, Saussure. Mém. Soc. Genève, Vol. XX, p. 230, pl. III, fig. 16 (1869).
Hemithyrsocera nigra, Kirby. Syn. Cat. Orth. Vol. I, p. 77 (1904).
Thyrsocera nigra, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 545 (1904); Bulletin Am. Mus. Nat. Hist. Vol. XXVI, p. 178 (1909).
Hemithyrsocera nigra, Shelford. Gen. Ins. fasc. 55, p. 8 (1907).
Hemithyrsocera palliata, Shelford. Gen. Ins. fasc. 55, Errata and Addenda, p. 14 (1907).

Brunner's description, Syst. Blatt. p. 120, is as follows:

Nigra. Antennis basi nigris, pone medium flavis. Pronoti margine postico et laterali partim aurantiacis. Elytris latioribus, totis cum pedibus piceis. ♀. Indes Orientales.

Long.	♀
corporis	8·5 mm.
pronoti	3 mm.
pron. transv.	4 mm.
elytrorum	9 mm.

In 'Revision' (Ann. Mus. Genova) Brunner modifies his description as follows:

Pronotum atrum, latere et postice aurantiaco-fasciatum, fascia laterali marginem anticum non attingente. Elytra tota aterrima, scabriuscula. Alæ infumatæ, vena ulnari integra. Abdomen totum atrum.—Burma; Tenasserim.

Hab: India, China, Indo-China (Shelford); Malay Peninsula (recorded by Rehn from Trang, Lower Siam); Sumatra (Rehn).

Hemithyrsocera soror, Brunner von Wattenwyl.

Thyrsocera soror, Brunner. Syst. Blatt. p. 120 (1865).
Hemithyrsocera soror, Kirby. Syn. Cat. Orth. Vol. I, p. 77 (1904).
Hemithyrsocera soror, Shelford. Gen. Ins. fasc. 55, p. 8 (1907).

♂. Parva. Antennis maris totis nigris, basi non dilatatis. Pronoto parvo, postice parum producto, aterrimo, margine, excepto antico, flavo-limbato. Elytris totis piceis. Pedibus aterrimis. ♂.—Celebes.

Long.	♂
corporis	8·5 mm.
pronoti	3 mm.
pron. transv.	3·3 mm.
elytrorum	10 mm.

Cette espèce a le pronotum postérieurement coupé droit, complétement noir luisant, avec le liseré jaune distinctement séparé du disque, les pattes toutes noires, enfin l'abdomen uniformément noir.

Hab: Celebes (Brunner); Java (Kirby, Shelford).

?Hemithyrsocera tessellata, Rehn.

Thyrsocera tessellata, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 545 (1904).
?Hemithyrsocera tessellata, Shelford. Gen. Ins. fasc. 55, p. 8 (1907).

Type: ♂ (immature).—This peculiar form does not appear to be closely related to any of the previously known forms.

Size small; form ovoid; apex anteriorly depressed: surface polished. Head projecting very slightly beyond the pronotum; the interspace between the eyes considerably greater than that between the ocelli; eyes reniform. Pronotum with the greatest width posteriorly; anterior margin narrow, truncate; posterior margin subtruncate, three times the width of

the anterior margin; lateral margin arcuate, anterior angles well rounded, posterior angles narrowly rounded. Abdomen strongly depressed, each segment of the lateral margin slightly projecting posteriorly; ventral segments, except the two apical ones, bearing evenly distributed longitudinal folds, which extend about the whole depth of the segment. Supra-anal plate transverse, very slightly produced, apex very slightly and very shallowly emarginate. Cerci fusiform, very slightly depressed, the apex acuminate, supplied with long stiff bristles. Subgenital plate not prominent, the apical margin slightly produced, truncate; styles unequal, one stout and acuminate, the other minute. Anterior femora with twelve spines on the anterior margin, restricted to the median and distal portions, the proximal two and apical two the largest in the series; posterior margin with five spines restricted to the median and distal portions, no genicular spine; tibiæ two-thirds the length of the femora; tarsi equal to the femora in length. Median femora with six spines on each margin, genicular spine slender; tibiæ about equal to the femora in length; tarsi shorter than the tibiæ, the metatarsi equal to the other joints in length. Posterior femora with six spines on each margin, genicular spine slender and about equal in length to the apical spine on the anterior margin; tibiæ slightly exceeding the femora in length; tarsi about two-thirds the length of the tibiæ, metatarsi about equal to the remaining tarsal joints in length, arolia rather small.

General colour whitish gray, mottled and sprinkled with black. Head with the lower surface evenly sprinkled with spots of dark brown, interspace between the eyes with three longitudinal streaks of brown; eyes mahogany brown. Pronotum heavily blotched centrally with black, the overlying tint forming distinct spots as the lateral margins are approached, and also decreasing in size; median portion of the pronotum bearing two longitudinal streaks of whitish gray. Mesonotum and metanotum with a colour pattern very similar to that of the pronotum, except for the absence of spots on the lateral portions and the infuscation of the posterior margin. Abdomen with the basic tint black, the folds of the segments and the apical portions of the two terminal segments dull grayish; ventral surface of the abdomen blackish centrally, blackish and grayish marmorate laterally. Cerci grayish, a touch of black on the basal portion of the upper surface. Limbs yellowish gray, each longitudinal marked with a single distinct line of black, which is more or less broken.

length of body	7·5 mm.
length of pronotum	2·7 mm.
greatest width of pronotum	3·5 mm.

Hab: Malay Peninsula (Trang, Lower Siam). (Dr. W. L. Abbott; U. S. Nat. Mus. Cat. No. 6946).

Genus *ANAPLECTA,* Burmeister.

Burmeister, Handb. d. Entomologie, Vol. II, p. 494 (1838).
Shelford, Gen. Ins. fasc. 55, p. 9 (1907).

Antennæ setaceous; pronotum transversely elliptical. Tegmina generally with discoidal area traversed by longitudinal veins. Wings with ulnar vein simple or bifurcate, provided with a large triangular apical area which, in a state of repose, is folded longitudinally and then reflected over the rest of the wing, it is without veins. Legs as in *Ectobia,* Westwood (*i.e.* femora with two spines on the anterior margin beneath). Supra-anal lamina slightly produced, triangular or trigonal. Sub-genital lamina of males without styles.

Key to the Malayan species of Anaplecta.

(Shelford, T. E. S. London 1906, p. 243).

1. Median vein of wing obsolescent at its distal end:
A. obscura, Shelf. (Mal. Pen.).

1¹. Median vein of wing not obsolescent at its distal end:
2. Medio-discal field of wing with four venules.
3. These venules transverse, apex of apical area not incised.
A. malayensis, Shelf. (Mal. Pen.).

3¹. Two proximal venules, very oblique, apex of apical area incised.
A. borneensis, Shelf. (Borneo).

2¹. Medio-discal field of wing with two transverse venules.
A. javanica, Sss. (Java).

Anaplecta obscura, Shelford.

Anaplecta obscura, Shelf. T. E. S. London (1906), p. 242, pl. XV, fig. 12; Gen. Ins. fasc. 55, p. 10 (1907).

♀ Fusco-castaneous, smooth, shining. Head piceous, maxillary palpi testaceous, antennæ fuscous; lateral margins of pronotum and mediastinal fields of tegmina hyaline: centre of abdomen beneath, legs and cerci testaceous; wings with the marginal field and most of the apical area infuscated, an oblique pale fascia crosses the upper half of the apical area. Wings with the marginal field dilated, seven costal veins, median vein obsolescent, curving from the apex of the radial vein to join it again near its middle, thus forming a trapozoidal areolet, 1st axillary vein bi-ramose, a short branch being given off from the transverse bar joining the two rami, apical area equals half the total wing-length, its basal margin straight.

Total length 4 mm.; length of tegmina 3·5 mm.

Hab: Malay Peninsula (E. de la Croix and P. Chapé, 1899).
One example, Paris Museum.

The great reduction in the extent of the wing-venation is alone sufficiently diagnostic of this interesting little species.

Anaplecta malayensis, Shelford.

Anaplecta malayensis, Shelford. T. E. S. London, 1906, p. 242, pl. XV, fig. 10; Gen. Ins. fasc. 55, p. 10 (1907).

♂ and ♀. Fusco-castaneous, lateral margins of pronotum and tegmina hyaline. Tegmina with seven costal veins, discoidal field traversed by four longitudinal veins, anal vein impressed. Wings with marginal field and apical area fuscous, with five costal veins, marginal field not dilated, radial vein bifurcate, medio-discal field crossed by three to four transverse venulæ, ulnar field half as broad, first axillary vein tri-ramose, apical area two-fifths of total wing-length, its basal margin obtusely angled.

♂ Total length 5 mm.; length of tegmina 4 mm.

♀ Total length 5 mm.; length of tegmina 4·8 mm.

Hab: Malay Peninsula. Three examples (Paris Museum).

Anaplecta borneensis, Shelford.

Anaplecta borneensis, Shelf. T. E. S. London (1906), p. 242, pl. XV, fig. 11; Gen. Ins. fasc. 55, p. 10 (1907).

♀. Fusco-castaneous; lateral margins of pronotum and tegmina hyaline. Tegmina with eight costal veins, discoidal area traversed by three longitudinal veins, reticulated. Wings hyaline, apical area slightly infuscated; four costal veins, the last obsolescent, radial vein bifurcated, medio-discal area crossed by two transverse venulæ near the middle and by two short oblique venulæ at the apex, first axillary vein tri-ramose, apical area divided unequally by one longitudinal vein, apex incised, basal margin very obtusely angled, about two-fifths of total wing-length. Supra-anal lamina slightly produced. Legs testaceous.

Total length 4·8 mm.; length of tegmina 4 mm.

Hab: Kuching, Sarawak. Three examples (Oxford Museum).

Anaplecta javanica, Saussure.

Anaplecta javanica, Sauss. Ann. Mus. Genova, Ser. 2, Vol. XV (XXXV), p. 71 (1895).

Anaplecta javanica, Kirby. Syn. Cat. Orth. Vol. I, p. 66 (1904).

Anaplecta javanica, Shelford. Gen. Ins. fasc. 55, p. 10 (1907).

Minuta, gracilis, fusco-castanea. Pronotum sat minutum, utrinque deflexum, marginibus lateralibus sordide testaceis. Elytra abdomen leviter superantia, margine costali sordide testaceo, sulco anali profunde impresso in quarta parte basali marginis suturalis desinens. Alæ subvitreæ, venis brunneis, campo marginale infuscato; venis costalibus 6. Vena media recta, venæ discoidali parallela, in dimidia parte proximali evanida, venulis transversis 2, areolas quadratas 2 formantibus. Vena ulnaris subrecta, indivisa; area ulnaris areæ mediæ paulo angustior. Vena axillaris anterius biramosa. Campus appendicularis $\frac{2}{5}$ longitudinis alæ æquans, apice attenuatus,

anguste parabolicus, haud incisus, in longitudinem per venam rectam inæqualiter divisus; vena dividens in margine postico desinens et ramum subtilem ad apicem alæ emittens. Pars postica campi appendicularis subhyalina; pars antica brunnea, per fasciam subhyalinam obliquam divisa. Pedes testacei. Abdomen fusco-testaceum. Cerci longiusculi. Long. 4·5 mm.; elytr. 3·8 mm.

Hab: Java (Batavia).

Sub-family 2. PHYLLODROMIINAE.

Shelford, Genera Insectorum, fasc. 73, p. 1, (1908).

Antennae setaceous or plumose. Head with the vertex more or less exposed. Scutellum sometimes exposed. Tegmina coriaceous or corneous, fully developed, reduced or scale-like. Wings fully developed, reduced or absent, costal veins generally numerous, regular, parallel, rarely with a small triangular apical field, never with a large folded and reflected apical area; ulnar vein with few exceptions ramose. Legs slender; femora generally strongly spined beneath, tarsi without pulvilli; an arolium nearly always present between the tarsal claws. Supra-anal lamina of both sexes of diverse shapes, but typically produced and triangular; sub-genital lamina of male with styles, one of which may be absent. Ootheca various in form, in some genera similar to that of the Ectobiinæ, in others coriaceous, carried by the female with the suture directed to one side and deposited only a few hours before the emergence of the larva.

Key to the Malayan genera of the Phyllodromiinæ.
(Adapted from Shelford, Gen. Ins. fasc. 73, pp. 2-3).

1. Tegmina exceeding the apex of the abdomen, usually considerably so.
   2. Ulnar veins of tegmina angulate. Genus *Pseudothyrsocera*, Shelford.
   2¹. Ulnar vein of tegmina not angled (except in a few species of *Ischnoptera*).
      3. Ulnar veins of wings sending branches to the dividing vein. Genus *Ischnoptera*, Burmeister.
      3¹. Ulnar vein of wings not sending branches to the dividing vein.
         4. Head very broad. Genus *Pseudophyllodromia*, B. v. W.
         4¹. Head not very broad.
            5. Maxillary palpi enormous. Genus *Duryodana*, Kirby.
            5¹. Maxillary palpi not large. Genus *Phyllodromia*, Serville.
1¹. Tegmina, if present, not exceeding the apex of the abdomen.
   2. Ulnar vein simple. Genus *Ceratinoptera*, B. v. W.
   2¹. Ulnar vein ramose. Genus *Allacta*, Sauss. and Zehn.

Genus *PSEUDOTHYRSOCERA*, Shelford.

Shelford, T. E. S., London, 1906, p. 250; Gen. Ins. fasc. 73, p. 4.

Similar to *Pseudomops*,* Serville, but with the anterior ulnar vein of the tegmina bifurcated instead of simple, the pronotum truncate posteriorly, and the antennæ generally incrassated and hirsute at the base in both sexes.

*Shelford's definition of *Pseudomops*, a South American genus, is as follows (Gen. Ins. fasc. 73, p. 3): Ocelli absent. Antennæ with basal half densely hirsute, except in the male sex of some species. Pronotum with posterior border obtusely angled. Tegmina with the anterior ulnar veins simple, the branches of the posterior ulnar vein forming an angle with the main stem, longitudinal. Wings without a triangular apical field, veins stout, branches of the ulnar vein few. Supra-anal lamina triangular, emarginate. Openings of the odoriferous glands on the abdominal tergites in the male sex usually conspicuous. Cerci elongate, in some species spatulate. Sub-genital lamina of male with styles. Femora strongly armed beneath.

Pseudothyrsocera scutigera, Walker.

Pseudomops scutigera, Walker. Cat. Blatt. B. M. p. 212 (1868).
Hemithyrsocera scutigera, Kirby. Syn. Cat. Orth. Vol. I, p. 77 (1904).
Pseudothyrsocera scutigera, Shelford. Gen. Ins. fasc. 73, p. 5 (1908).

♂. Nigra, fusiformis; caput prothoracem paullo superans; oculi invicem remoti; palpi basi albi; antennæ albo latissime fasciatæ; prothorax flavo marginatus; pedes graciles, basi albi, tibiarum spinis fulvis; alæ anticæ vitta costali lutea longi-fusiformi.

♂. Black, fusiform, smooth, shining. Head extending a little beyond the prothorax. Eyes tawny, wide apart. Palpi white towards the base. Antennæ with a very broad white band beyond the middle. Prothorax with an irregular pale yellow border, which is broadest on each side and is there indented; hind border rounded. Legs slender; coxæ and femora white, the former black towards the base, the latter black towards the tips; spines of the tibiæ tawny. Wings extending much beyond the abdomen. Fore wings with a luteous costal stripe, which is broadest in the middle, and extends from the base to two-thirds of the length. Length of the body $4\frac{1}{2}$ lines (=9·5 mm.), of the wings 10 lines (= 21 mm.).

Hab: Sarawak. In Mr. Saunders' collection.

Pseudothyrsocera pica, Walker (Plate VII, fig. 37).

Pseudomops pica, Walk. Cat. Blatt. B. M. p. 213 (1868).
Thyrsocera pica, Kirby. Syn. Cat. Orth. Vol. I, p. 78 (1904).
Pseudothyrsocera pica, Shelford, Gen. Ins. fasc. 73, p. 5, pl. I, fig. 3 (1908).

♂. Nigra fusiformis; caput prothoracem vix superans: oculi invicem remoti; antennæ dimidio basali incrassato subfasciculato; prothorax longiusculus, bifoveolatus; cerci longissimi; coxæ albo marginatæ; alæ anticæ striga costali brevissima guttaque basali albis.

♂. Black, fusiform, smooth, shining. Head hardly extending beyond the prothorax. Eyes wide apart. Antennæ incrassated and slightly tufted except towards the tips. Prothorax elongate, with an oblique furrow on each side in the disk; hind borders slightly rounded. Cerci lanceolate, very

long. Legs moderately long and stout; coxæ bordered with white. Wings extending much beyond the abdomen. Fore wings with a very short white costal streak near the base, and with a white basal dot. Length of the body $5\frac{1}{2}$ lines (= 11·6 mm.), of the wings 13 lines (= 27·5 mm.). This species agrees with the *Ischnoptera* in the furrows on the prothorax.

Walker's measurements of the 'wings' (*i.e.* tegmina) are almost surely wrong. The measurements of the specimen (♂) in the Raffles Museum are as follows:

total length	19 mm.
pronotum, length	5 mm.
pronotum, width	5 mm.
tegmina, length	14 mm.

Hab: Singapore (Walker); Sumatra (Walker); Bukit Kutu, Selangor, 3000 feet, April 1915 (Raffles Museum).

Pseudothyrsocera ruficollis, Shelford (Plate VII. fig. 26).

Pseudothyrsocera ruficollis, Shelf. T. E. S. London, 1906, p. 251, pl. XIV, fig. 6; Gen. Ins. fasc. 73, p. 5 (1908).

♂. Head and pronotum bright rufous; eyes, antennæ (mutilated) and maxillary palpi black. Tegmina black, a white spot on each mediastinal area and at the base of each anal field. Wings fuscous. Abdomen black. Coxæ with their distal ends and outer borders testaceous-white; the remaining joints of the legs are missing.—Penang (Cantor). One example.

Total length 16 mm.; length of tegmina 13·2 mm.

Shelford's description was based on a mutilated specimen, but he points out that the arrangement of the veins of the tegmina is the same as in *P. pica*, Walker, that it is most nearly allied to that species and that when perfect specimens were taken, the antennæ would probably be found to be plumose in the basal half as in *P. pica*. He also points out that the insect is remarkably fusiform, and that both in colour and in shape it is very like an Elaterid beetle. Mr. Moulton, of the Sarawak Museum, has since sent me a perfect specimen from Matang Road, Sarawak, and I obtained recently (April 1915) a further specimen from Bukit Kutu, Selangor, 3000 feet. In both specimens the antennæ are plumose.

Hab: Penang; Selangor; Sarawak.

Pseudothyrsocera montana, Shelford.

Pseudothyrsocera montana, Shelf. T. E. S. London, 1906, p. 251; Gen. Ins. fasc. 73, p. 5 (1908).

♂. Piceous. Head piceous, a triangular ochreous spot below the eyes, basal joints of maxillary palpi rufous, antennæ slightly incrassated, black. Pronotum trapezoidal, not covering the vertex, sides deflexed, posterior margin rounded.

slightly produced. Tegmina piceous, apex of mediastinal field testaceous, sixteen to seventeen costal veins, discoidal field with six longitudinal sectors. Wings infuscated, ulnar vein tri-ramose. Abdomen, coxæ and femora rufous; cerci, apices of femora, tibiæ and tarsi black, tibial spines rufous. Supra-anal lamina produced, trigonal, sub-genital lamina trapezoidal, with one style.

Total length 16 mm., length of tegmina 12·5 mm.

Hab: Mt. Matang, 3000 feet, Sarawak, Borneo. Two examples (Oxford Museum).

The species in general facies approaches the genus *Pseudomops*.

Pseudothyrsocera bicolor, Shelford.

Pseudothyrsocera bicolor, Shelf. Deutsch. Ent. Zeitschr. 1909, p. 612.

♂. Head piceous. Antennæ with the basal two-thirds piceous and plumose, apical third setaceous, ochreous. Pronotum piceous, smooth, trapezoidal. Tegmina piceous at base and apex, intermediate area flavo-testaceous with a small fuscous macula in the middle, an elongate hyaline spot in the mediastinal field; 7 longitudinal discoidal sectors, anterior ulnar vein 3-ramose. Wings with extreme base and apex infuscated, remainder hyaline, veins of posterior part piceous, mediastinal vein 3-ramose, 8 costals, the first 3 and the mediastinal rami lengthily incrassated, ulnar vein 5-ramose. Abdomen above and beneath piceous; 1st tergite with a scent-gland opening; supra-anal lamina trigonal, but produced in the centre to form a rounded median lobe, surpassed by the sub-genital lamina which is produced, almost symmetrical: the left style stout, almost median in position, much longer than the minute right style. Coxæ with their apical halves and their outer margins testaceous, the remainder of the legs piceous.

total length	17·2 mm.
length of body	12·5 mm.
length of tegmina	13 mm.
pronotum	5 × 5·6 mm.

Hab: Mt. Matang, Sarawak.

Pseudothyrsocera moultoni, n. sp. (Plate III, fig. 16).

♀. Head chestnut. Antennæ plumose, black, except for a short setaceous terminal portion which is white, ending in black. Tegmina chestnut, with three black spots each, the first one filling almost entirely the anal (=axillary) area, the second occupying the centre of each tegmen, and the third the apex. Body chestnut. Coxæ testaceous, with a large black blotch near their base; femora, tibiæ and tarsi black. Cerci black.

total length	♀	20 mm
pronotum, length		4.5 mm.
pronotum, width		5 mm.
tegmina, length		14 mm.

Hab: Mt. Merinjak, Sarawak, 2200 feet. One specimen. Collected by Mr. Moulton, May 29th 1914, who kindly sent me this beautiful insect for description and after whom I have much pleasure of calling this species.

Genus ***ISCHNOPTERA,*** Burmeister.

Burmeister, Handb. d. Entomologie, Vol. II, p. 500 (1838).

Shelford, Gen. Ins. fasc. 73, p. 6 (1908).

Antennæ much longer than the body, not incrassated, nor hirsute. Pronotum typically trapezoidal, sides deflexed, anteriorly not quite covering vertex of head. Tegmina and wings reduced in the females of some species, in the males always longer than the body. Wings with the ulnar vein sending some branches towards the dividing vein and others towards the apex of the wing. Sub-genital lamina of the male frequently asymmetrical and provided with one or with two styles. Cerci elongate. Legs long, slender; femora strongly spinose. Ootheca, where known, coriaceous in texture and carried by the female with the suture directed to one side.

Ischnoptera reversa, Walker.

Ischnoptera reversa, Walk. Cat. Blatt. B. M. Suppl. p. 147 (1869).

Ischnoptera reversa, Kirby. Syn. Cat. Orth. Vol. I, p. 81 (1904).

Ischnoptera reversa, Shelford, T. E. S. 1906, p. 489; Gen. Ins. fasc. 73, p. 7. (1908).

Shelford's description of this species is as follows:

♂ Rufo-castaneous. Basal half of antennæ, terminal joints of maxillary and labial palpi, fuscous. Pronotum trapezoidal, sides deflexed, not covering vertex of head. Tegmina with nineteen costal veins, discoidal field with ten longitudinal sectors. Wings with the mediastinal vein three-branched, radial vein unbranched, twelve costal veins, ulnar vein with nine branches, three of which go towards the dividing vein. Supra-anal lamina triangular, sub-genital lamina ample, its border notched, two styles. Legs with the genicular angles of the femora, the tibiæ and tarsi fuscous, all the femora with genicular spines, formula of apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{1}$, anterior margin of front femora with numerous spines, the more distal short and closely set.

Total length 20 mm.; length of body 13 mm.; length of tegmina 15 mm.

Hab: Singapore (Wallace).—N. W. Borneo (Oxford Museum).

Ischnoptera excavata, Shelford.

Ischnoptera excavata, Shelford. T. E. S. London, 1906, p. 265, pl. XVI, fig. 11; Gen. Ins. fasc. 73, p. 7 (1908).

♂. Fulvo-ferruginous. Eyes closer together than the antennal sockets. Pronotum trapezoidal, sides deflexed, posterior margin obtusely angled. Tegmina with the radial vein bifurcated near base, 17 costal veins, 7 discoidal sectors. Wings hyaline, marginal field and veins ferruginous, mediastinal vein with 5 branches, radial vein bifurcated, 11 costal veins, ulnar vein sending 4 rami to apex, 2 to dividing vein, first axillary vein tri-ramose. Anterior femora with anterior margin beneath strongly spined, the proximal spines longer than the distal; all the femora with apical spines on both margins and with genicular spines. Supra-anal lamina profoundly modified, proximally it is deeply depressed with a median elevated carina, so that two wide pits are formed which are directed forwards beneath the preceding tergum, posterior margin of the lamina rounded, slightly emarginate. Sub-genital lamina of normal shape, but without styles. Cerci moderate.

Total length 21 mm.; length of tegmina 17 mm.

Hab: Kuching, Sarawak (March 1899). One example.

Shelford adds: I know of no other species of Blattid in which so extensive a modification of the supra-anal lamina occurs; the opening of the so-called "repugnatorial" glands in many species leads to modifications of the penultimate or ante-penultimate terga, but not to that of the supra-anal lamina.

Ischnoptera cavernicola, Shelford.

Ischnoptera cavernicola, Shelf. A. M. N. H. (7), XIX, p. 27 (1907); Gen. Ins. fasc. 73, p. 7 (1908).

♂. Head castaneous, mouth-parts testaceous; antennæ testaceous, one and a half times longer than the body. Pronotum rufo-castaneous, with lateral and posterior margins narrowly castaneous. Tegmina clear testaceous, radial vein bifurcated, twelve costal veins, six discoidal sectors. Wings hyaline, mediastinal vein with three branches, seven costal veins, radial vein not bifurcated, ulnar vein sending three branches to the dividing vein and three to the apex of the wing. Abdomen rufo-testaceous, supra-anal lamina slightly produced, rounded; sub-genital lamina produced, narrow, with two stout styles; cerci elongate. Legs rufo-testaceous; front femora with anterior margin beneath armed throughout its length with a series of short spines, the most distal the shortest; apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{1}$; genicular spines 1, 1, 1.

Length of body 10 mm.; length of tegmina 9·5 mm.

Hab: In cave at Bidi, Sarawak, Borneo (R. Shelford); one example (Oxford Museum). [No. 22].

The species, which can be readily recognized by the pale pronotum with dark margins, was found in some numbers in a large and quite dark cave in the limestone formation at Bidi, Sarawak; it is somewhat remarkable that this cockroach, a Stenopelmatid (*?Dolichopoda*), and a species of crab (*Potamon bidiense*, Lanch.), which were all found in considerable numbers in the darkest part of the cave, show no reduction in size of the eyes; one can only suppose that the caves have been peopled within quite recent times by these Arthropoda. The antennæ of the Stenopelmatid are of great length, but this is not the case in *Ischnoptera cavernicola*.

Ischnoptera montis, Shelford.

Ischnoptera montis, Shelf. T. E. S. London, 1906, p. 266, pl. XVI, fig. 10; Gen. Ins. fasc. 73, p. 7 (1908).

♂. Head castaneous, antennæ rufo-fuscous. Pronotum trapezoidal castaneous, sides deflexed. Tegmina testaceous-hyaline, thirteen to fourteen costal veins, anterior ulnar vein quadri-ramose, posterior ulnar tri-ramose. Wings hyaline, mediastinal vein long with two branches, radial vein unbranched, eight costal veins, the four proximal ones incrassated, median vein simple, ulnar vein giving off five veins to apex and three to the dividing vein. Abdomen castaneous, the first few segments paler; the first segment above with a median deep depression, the anterior wall of which is fimbriated with rufous hairs that appear to conceal a minute orifice, from the posterior wall projects a blunt tooth covered with a rufous pubescence. The middle of the seventh segment is depressed and the middle of the posterior margin of the sixth segment is slightly elevated, forming a wide-mouthed tube in which can be seen numerous hairs. Supra-anal lamina trapezoidal; sub-genital lamina asymmetrical with two acuminate styles asymmetrical placed, the right being almost median, the left lateral. Cerci castaneous, mutilated. Legs rufo-castaneous, front femora with several spines along the anterior margin beneath, the distal members of the series shorter than the proximal.

Length of body 13 mm.: length of tegmina 14 mm.

Hab: Mt. Matang, Sarawak, 3000 feet. One example.

Ischnoptera ridleyi, Shelford.

Ischnoptera ridleyi, Shelf. A. M. N. H. (7), Vol. XIX, p. 26 (1907); Gen. Ins. fasc. 73, p. 7 (1908).

♂. Head ferruginous, a V shaped darker mark between the antennal sockets; antennæ ferruginous, longer than the body. Pronotum rounded, posteriorly truncate, sides slightly deflexed, not covering vertex of head; disk rufous, with two broad vittæ, black in colour, not reaching the posterior margin, their outer margins sinuate, their inner margins straight.

Tegmina ferruginous; radial vein bifurcated at the middle; sixteen costal veins; discoidal area with eleven longitudinal sectors; seven axillary veins. Wings hyaline, veins fuscous, the marginal field suffused with flavid; radial vein bifurcated at the middle, mediastinal vein with five branches; fourteen costal veins; median vein sinuate; ulnar vein with fourteen branches, six of which go to the apex of the wing. Abdomen infuscated above, ferruginous below; the seventh tergite notched in the middle of its posterior margin, the eighth very narrow; the eighth sternite reduced to a pair of lateral lappets; the supra-anal lamina quadrate, its posterior margin notched and produced on each side of the notch into two curved and slender processes; the sub-genital lamina sub-quadrate, its posterior margin much thickened, forming two asymmetrical swellings which are grooved and furnished with numerous minute denticles; styles absent. Front femora with the anterior border beneath armed throughout its length with long stout spines.

Length of body 22 mm,; length of tegmina 20 mm.

Hab: Singapore (H. N. Ridley, March to May, 1906); one example (Oxford Museum).

This species, like so many of its Oriental congeners, presents unusual modifications of those external parts which are related to reproduction. The form of the sub-genital lamina in *I. Ridleyi* recalls that of *Hemithyrsocera histrio,* Burm.

Genus ***PHYLLODROMIA,*** Serville.

Serville, Hist. nat. des Insectes (Orthoptères), p. 105 (1839).
Shelford, Gen. Ins. fasc. 73, p. 10 (1908).

Vertex of head not covered by pronotum, distance apart of eyes scarcely greater than their breadth. Scutellum not exposed. Tegmina and wings usually longer than the body in both sexes (*P. supellectilium,* Serv. excepted), discoidal sectors of tegmina usually oblique. Wings with the ulnar vein typically multi-ramose (*P. germanica,* L., excepted), all the rami directed towards the apex of the wing; triangular apical field sometimes present. Supra-anal lamina very variable in both sexes, but typically triangularly produced in the male. Scent-gland openings usually conspicuous. Sub-genital lamina of the male with a pair of small styles. Femora strongly armed beneath. Arolia present between the tarsal claws. Othecæ, where known, coriaceous, carried by the female with the suture directed to one side.

Phyllodromia bivittata, Serville.

Blatta bivittata, Serv. Ins. Orth. p. 108 (1839).
Phyllodromia bivittata, Brunner. Syst. Blatt. p. 92 (1865).
Blatta bivittata, Saussure. Miss. Mex., Orth. p. 28 (1870).

Phyllodromia birittata, Kirby. Syn. Cat. Orth. Vol. I, p. 87 (1904).
Phyllodromia birittata, Shelford. Gen. Ins. fasc. 73, p. 11 (1908).

Long. 6 lig. (= 12·7 mm.). Corps d'un jaune livide en dessus, d'une teinte plus rousse que dans la *germanica*. Tête jaunâtre avec une bande transverse brune, entre les yeux. Prothorax presqu' orbiculaire, lisse, uni, très-finement rebordé sur les côtés, qui ne sont point diaphanes comme ceux de l. *germanica*, mais tout aussi opaques que le reste du prothorax; le disque de celui-ci offre deux bandes longitudinales, parallèles, assez larges, noirâtres, bien séparées l'une de l'autre, n'atteignant ni le bord postérieur ni l'antérieur: le bord postérieur est à peine simué. Elytres ovalaires, un peu linéaires, rétrécies postérieurement, depassant l'abdomen d'une ligne et demie dans la femelle; leur espace discoïdal circonscrit par la strie arquée, n'offrant que des stries longitudinales, sans réticulation; il part de chaque côté de la base une ligne élevée, peu apparante et de même couleur que l'élytre: le reste de celles-ci, à partir de la strie arquée, est strié longitudinalement; la marge extérieure débordant l'abdomen, est de même consistance que l'élytre, et chargée de stries obliques dans ses deux tiers inférieurs. Ailes testacées, de la longueur des élytres, striées longitudinalement, à réticulation postérieure peu prononcée. Dessous du corps d'un jaune testacé; stigmates de l'abdomen noirâtres dans la femelle. Antennes de la longueur du corps au moins, brûnâtres. Pattes d'un jaune testacé pâle et uniforme, cuisses un peu épineuses en dessous. Mâle et femelle.

"Senegal, Cape of Good Hope, Ile-de-France, Cuba, Peru, etc."

Brunner's description is considerably more succinct:

Fusca. Capite fusco vel fusco-variegato, vertice rufescente. Vittis duabus pronoti fuscis cum spatio medio flavo æquilatis. Elytris castaneis cum pronoto pallide—marginatis, vittâ longitudinali fusciore adjectâ. ♂.

long.	♂
corporis	10-11 mm.
pronoti	3 mm.
pron. transv.	3·5-4 mm.
elytrorum	11·5-13 mm.

Hab: Senegal, Cape of Good Hope, Ile-de-France, Cuba, Peru (Serville).—Brazil (Brunner).—'Cosmopolitan' (Kirby).—North Borneo (Oxford Museum).

Phyllodromia triangulariter-vittata, Brunner von Wattenwyl.

Phyllodromia triangulariter-vittata, Brunner. Abhandl. Senckenb. Ges. XXIV, p. 203, pl. XVI, fig. 4 (1898).
Phyllodromia triangulariter-vittata, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).
Phyllodromia triangulariter-vittata, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Statura majore. Vertex liber, niger. Frons testacea. Pronotum nigrum, marginibus antico et lateralibus pallidis, necnon vittis duabus discoidalibus, triangularibus ornatum. Elytra picea, margine antice toto testaceo. Alæ fuscæ, vena ulnari biramosa. Abdomen superne fuscum, subtus cum pedibus testaceum. Cerci testacei ♀.

long. corp.	♀	10·5 mm.
long. pron.		3·5 mm.
lat. pron.		4·6 mm.
long. elytr.		12·5 mm.

Hab: Baram, Borneo.

Phyllodromia latius vittata, Brunner von Wattenwyl.

Phyllodromia latius vittata, Brunner. Abhandl. Senckenb. Ges. XXIV, p. 202, pl. XVI, fig. 2 (1898).

Phyllodromia latius vittata, Kirby. Syn. Cat. Orth. Vol. I, p. 90 (1904).

Phyllodromia latius vittata, Shelford. Gen. Ins. fasc. 73, p. 14 (1908).

Statura minore. Vertex a pronoto haud obtectus, cum fronte niger. Pronotum piceum, margine antico, necnon margine laterali luteo marginato, disco vitta lutea, antice et postice subaeque lata, ante marginem posticum terminata. Elytra picea, margine antico toto testaceo. Alæ infumatæ, vena ulnari biramosa. Pedes cum abdomine testacei. Cerci superne testacei, subtus fusci. ♂.

long. corp.	♂	9·5 mm.
long. pron.		2·8 mm.
lat. pron.		3·6 mm.
long. elytr.		10 mm.

Hab: Buitenzorg, Java.

Phyllodromia longe-alata, Brunner von Wattenwyl.

Phyllodromia longe-alata, Brunner. Abhandl. Senckenb. Ges. XXIV, p. 205, pl.XVI, fig. 9 (1898).

Phyllodromia longe-alata, Kirby. Syn. Cat. Orth. Vol. I, p. 92 (1904).

Phyllodromia longe-alata, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Castanea. Vertex liber, cum fronte ferrugineus. Pronotum elongatum, disco nigro, utrinque lineola lactea delineato, marginibus lateralis pallidis. Elytra longa et lata, margine antico toto late pallido, lineolis lacteis pronoti usque ad medium campi marginalis perductis. Alæ infumatæ, vena ulnari 3-ramosa. Pedes cum abdomine ferruginei. ♀.

long. corp.	♀	12 mm.
long. pron.		3·7 mm.
lat. pron.		4·3 mm.
long. elytr.		13·5 mm.

Hab: Sarawak.

Phyllodromia funebris, Walker.

Blatta funebris, Walker. Cat. Blatt. B. M. p. 225 (1868).
Allacta funebris, Kirby. Syn. Cat. Orth. Vol. I, p. 99 (1904).
Phyllodromia funebris, Shelford. T. E. S. 1906, p. 490; Gen. Ins. fasc. 73, p. 13 (1908).

♂. Picea, fusiformis, subtus rufescente picea; caput rufum, prothoracem perpaulla superans; oculi inviem remoti; prothorax lateribus rotundatis subreflexis, margine postico recto; cerci sat longi; pedes robusti; alæ nigricantes, abdomen paullo superantes; alæ anticæ semicoriaceæ, costa subrotundata.

♂. Piceous, fusiform, smooth, shining, reddish piceous beneath. Head red, extending very little beyond the prothorax. Eyes wide apart. Prothorax a little longer than half its breadth, narrower in front: fore border slightly truncated; sides rounded, slightly reflexed; hind border straight. Cerci rather long. Legs stout, moderately long; spines long and slender. Wings blackish, extending a little beyond the abdomen. Fore wings semicoriaceous; costa slightly rounded; intermediate longitudinal veins very distinct. Length of the body 4 lines (=8·4 mm.); of the wings 8 lines (=17 mm.).

Shelford adds to this description the following particulars.

♂. Pronotum not covering vertex of head, trapezoidal, sides scarcely deflexed, margined. Tegmina with twelve costal veins, the last three bifurcated. Supra-anal lamina triangular, sub-genital lamina ample, its posterior border slightly emarginate. Anterior border of front femora with three long spines in the middle, numerous piliform spines distally.

Near *P. lycoides,* Walker, from India.

Hab: Sarawak (Wallace).

Phyllodromia hamifera, Walker.

Blatta hamifera, Walker. Cat. Blatt. B. M. p. 224 (1868).
Allacta hamifera, Kirby. Syn. Cat. Orth. Vol. I, p. 100 (1904).
Phyllodromia hamifera, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

♂ Pallide flava, longi-elliptica; caput prothoracem perpaullo superans; oculi inviem approximati; antennæ piceæ, basi pallide testaceæ; prothorax longiusculus, plaga maxima nigra marginem posticum attingente et ibi dilatata, lateribus rotundatis, margine postico fere recto; pedes robusti; alæ anticæ semicoriaceæ, latiusculæ, abdomen longe superantes, vitta lata informi nigra ramos duos latissimos subhamatos emittente, costa rotundata; alæ posticæ diaphanæ.

♂ Pale-yellow, elongate-elliptical, smooth, shining. Head extending very little beyond the prothorax. Eyes piceous, approximate to each other. Antennæ piceous, pale

testaceous at the base. Prothorax much narrower in front, very much longer than half its breadth; disk black, this hue extending nearer to the fore border than to the sides and dilated on the hind border, which it wholly occupies; fore border truncated; sides rounded; hind border nearly straight. Legs stout, moderately long; spines long. Wings extending much beyond the abdomen. Fore wings semicoriaceous, rather broad, with a broad irregular black stripe, which emits two irregular very broad somewhat hooked streaks towards the costa; apical veins lined with black; veins regular; intermediate longitudinal veins distinct; costa rounded. Hind wings pellucid; veins pale. Length of the body 4½ lines (=9·5 mm.); of the wings 12 lines (=25·4 mm.).

Hab: Sarawak. In Mr. Saunders' collection.

Phyllodromia ruficeps, Kirby.

Phyllodromia ruficeps, Kirby. A. M. N. H. (7), V, p. 280 (1900); Distant, Ins. Transvaal p. 20, pl. I, fig. 4 (1900); Syn. Cat. Orth. Vol. I, p. 89 (1904).
Phyllodromia ruficeps, Shelford. Gen. Ins. 73, p. 11 (1908).

Long. corp. cum elytris 13-15 mm.

♂. Black, vertex and face dark red, trochanters and a narrow border to the abdomen beneath testaceous, legs and spines inclining to reddish. Pronotum sub-hyaline, the middle filled up with a large black mark, not extending to the front margin, and broadest behind, where it is narrowly bordered with pale; tegmina dark blackish brown, inclining to reddish towards the sides and extremity of the dark portion, and with the costal area broadly sub-hyaline for four fifths of its length.

Differs from *P. vinula,* Stål. (*amœna,* Walker), by its larger size and red head.

Hab: Fort Johnston and Zomba (Nyasaland, N. E. Rhodesia). The Oxford Museum contains a specimen from the Botanic Gardens, Singapore, where it was probably accidentally introduced.

Phyllodromia aliena, Brunner von Wattenwyl.

Phyllodromia aliena, Brunner. Ann. Mus. Genova, (2), Vol. XIII, p. 15 (1893).
Phyllodromia aliena, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).
Phyllodromia aliena, Shelford. Gen. Ins. 73, p. 13 (1908).

Colore testaceo. Frons rufescens. Pronotum unicolor testaceum, lateribus deflexis. Elytra testacea. Alæ levissime infumatæ, campo a vena radiali et vena spuria* delineato latiore, vena ulnari integra. Pedes testacei. Abdomen testaceum. Lamina supraanalis ♂ brevissima, transversa, rotundato-truncata. Titillator aculeatus. Lamina subgenitalis ♂ attenuato-elongata, margine postico leviter emar-

* In 'Syst. Blatt' Brunner uses the term 'vena media.'

ginato, stylis nullis. Lamina supraanalis utriusque sexus triangularis. Segmentum ventrale ultimum ♀ late truncatum ♂ ♀.

long. corporis	♂	8 mm.	♀	8 mm.
long. pronoti		2·5 mm.		2·3 mm.
lat. pronoti		2·7 mm.		3 mm.
long. elytrorum		9·3 mm.		8·7 mm.

Cette espèce diffère des congénères par la structure des organes sexuels, qui présentent des formes inusitées.

Hab: Brunner's material came from Bhamò, Teinzò (Upper Burma), but the Oxford Museum possesses specimens from Kota Tinggi, Johore, presented by Ed. Lor. Meyer in 1904.

Phyllodromia contingens, Walker.

Blatta contingens, Walker. Cat. Blatt. B. M. p. 229 (1868).
Blatta humeralis, Walker, ibid. Suppl. p. 140 (1869).
Phyllodromia contingens, Kirby. Syn. Cat. Orth. Vol. I, p. 92 (1904).
Phyllodromia contingens, Shelford. T. E. S. 1906, p. 490, pl. XXX, fig. 4; Gen. Ins. fasc. 73, p. 13 (1908).

We omit Walker's original description and substitute the one given by Shelford:

Flavo-testaceous. Antennæ longer than total length. Pronotum transversely elliptical, lateral margins hyaline, posterior not produced. Lateral margins of tegmina broadly hyaline, mediastinal area areolated, eleven costal veins. Supra-anal lamina of male shortly produced, trigonal, sub-genital lamina with the posterior angles produced to form two setiform processes, the styles situated in deep notches; supra-anal lamina of female short, transverse, sub-genital lamina ample, semi-orbicular.

♂ (= *Blatta humeralis,* Walker): Total length 13 mm.; length of body 10 mm.; length of tegmina 10 mm. Singapore (Wallace).

♀ (= *Blatta contingens,* Walker): Total length 15 mm.; length of body 10 mm.; length of tegmina 12·8 mm. Sarawak (Wallace).

Hab: Singapore. Sarawak.

Phyllodromia germanica, Linné.

Blatta germanica, L. Syst. Nat. (ed. XII), Vol. I (2), p. 668 (1767).
Blatta germanica, Herbst. Fuessly Arch. Ins. p. 186, pl. XLIX, fig. 10 (1786).
Blatta germanica, Stoll. Spectres Blatt. p. 7, pl. IV d.f. 18 (1813).
Blatta germanica, Serville. Ins. Orth. p. 107 (1839).
Phyllodromia germanica, Fisch. Waldh. Orth. Ross. p. 76, pl. I, fig. 4 (1842).
Phyllodromia bivittata, Saussure. Mém. Mex. Blatt. p. 102 (1864).
Phyllodromia germanica, Brunner. Syst. Blatt. p. 90, pl. II, fig. 7 (1865).

Blatta germanica, Walker. Cat. Blatt. B. M. p. 88 (1868).
Phyllodromia germanica, Kirby. Syn. Cat. Orth. Vol. I, p. 87 (1904).
Phyllodromia germanica, Shelford. Gen. Ins. fasc. 73, p. 11 (1908).

Brunner's definition in Syst. Blatt., (1865) p. 90, is as follows:

Fulvo-testacea. Capite magno prominulo, fronte fuscâ, vertice pallido. Pronoto maris oblongo, feminæ tranverso, vittis duabus longitudinalibus fuscis, spatio rufo-testaceo, vittis latiore sejunctis. Elytris unicoloribus. Alarum venâ infra-mediâ et dividenti integris. ♂ ♀.

Long.				
corporis	♂ 13	mm.	♀ 11	mm.
pronoti	3	mm.	3	mm.
pron. trans.	3·5	mm.	4·5	mm.
elytrorum	11·5	mm.	11	mm.

Hab: Cosmopolitan. The Raffles Museum contains specimens from Singapore (Botanic Gardens, Bukit Timah and Selitar), from the Semangko Pass (Selangor-Pahang), and from Bukit Kutu, Selangor. The Rev. G. Dexter Allen collected it at Banting, Sarawak, and Messrs. Robinson and Kloss at Sungei Kumbang 4500′ and Sandaran Agong 2500′, Sumatra.

Phyllodromia irregulariter-vittata, Brunner von Wattenwyl.

Phyllodromia irregulariter-vittata, Brunner. Abhandl. Senekenb. Ges. XXIV, p. 202, pl. XVI, fig. 1 (1898).

Phyllodromia irregulariter-vittata, Kirby. Syn. Cat. Orth. Vol. I, p. 90 (1904).

Phyllodromia irregulariter-vittata, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Caput a pronoto obtectum. Vertex fuscus. Frons testacea. Pronotum castaneum, margine antico necnon marginibus lateralibus luteo vittatis, disco nigro, vitta longitudinali pallida, antice angustiore, latere lyrato delineata, postice ante marginem terminata ornato. Elytra castanea, campo marginali testaceo. Alæ parum infumatæ, vena ulnari biramosa. Pedes cum abdomine lutei. Cerci pallidi. ♀.

long. corporis	♀	11·5 mm.
long. pronoti		3·6 mm.
lat. pronoti		5 mm.
long. elytrorum		13 mm.

Hab: Borneo, Java.

Phyllodromia secura, Krauss.

Blatta secura, Krauss. Semon's Zool. Forsch. Austr. u. Mal. Arch., Vol. V, (1903), p. 749.

Phyllodromia secura, Shelford. Gen. Ins. fasc. 73, p. 14 (1908).

♂ *Blattæ irregulariter-rittatæ* (Brunner) statura et pictura pronoti elytrorumque simillima, differt capite a pronoto haud obtecto, vertice sordide flavo, fronte fusco-bimaculata alarum vena ulnari 5-ramosa, cercis fuscescentibus.—Abdomen sordide flavum, supra retrorsum infuscatum, late ovatum, tergita omnia angulis lateralibus acute productis instructa. Lamina supra-analis in medio elevato-carinulata, utrinque impressa, postice utrinque levissime sinuata, in medio emarginata. Lamina sub-genitalis utrinque levissime sinuata, in medio profunde emarginata, in fundo emarginaturæ stylis brevissimis, crassiusculis, sese fere tangentibus instructa.

longitudo	corporis	♂ 13 mm.
„	pronoti	4 mm.
latitudo	„	5 mm.
longitudo	elytrorum	14 mm.

Hab: Buitenzorg (Java).

Krauss adds: Der von Brunner aus Java und Borneo nur nach dem ♀ beschriebenen *B. irregulariter-rittata* in Grösse und Färbung sehr nahestehend, unterscheidet sie sich vor allem durch die 5-ästige Vena ulnaris der Hinterflügel, die bei dieser nur 2-ästig ist, sowie durch eine andere Färbung des Scheitels und der Stirne.

Phyllodromia virescens, Walker.

Blatta virescens, Walker. Cat. Blatt. B. M. p. 231 (1868).

Chorisoneura (?) *virescens*, Kirby. Syn. Cat. Orth. Vol. I, p. 73 (1904).

Phyllodromia virescens, Shelford. T. E. S. 1906, p. 491; Gen. Ins. fasc. 73, p. 13 (1908).

♀. Albido-viridis, fusiformis; caput prothoracem vix superans; oculi invicem remoti; antennæ pallide testaceæ; prothoracis latera late hyalina, valde rotundata; cerci longissimi, base fuscescentes; pedes graciles; alæ hyalinæ, albo venosæ, abdomen longe superantes; alæ posticæ area costali lata, costa rotundata.

♀. Whitish-grey, fusiform, smooth, shining. Head hardly extending beyond the prothorax. Eyes pale testaceous, wide apart. Antennæ pale testaceous, slender. Prothorax a little longer than half its breadth, widely pellucid on each side; fore border slightly truncated; sides much rounded; hind border straight. Cerci slender, very long, brownish towards the base. Legs slender, moderately long; spines very slender. Wings pellucid, extending much beyond the abdomen; veins white. Fore wings with a broad costal area; veins regular; costa rounded. Length of the body 3½ lines (=7·4 mm.); of the wings 9 lines (=19 mm.).

Hab: Sarawak. In Mr. Saunders' collection.

To this description Shelford adds the following details: ♀. The species is readily recognizable by its pale green

colour. Small; pronotum not covering vertex of head, trapezoidal, margins broadly hyaline. Tegmina hyaline, eleven to twelve costals, discoidal sectors oblique. Supra-anal lamina trigonal, sub-genital lamina ample, cerci elongate. Front femora with close-set piliform spines on anterior margin.

Phyllodromia laterifera, Walker.

Blatta laterifera, Walker. Cat. Blatt. B. M. p. 231 (1868).
Phyllodromia laterifera, Kirby. Syn. Cat. Orth. Vol. I, p. 92 (1904).
Phyllodromia laterifera, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

♀. Testacea, fusiformis; caput prothoracem vix superans; oculi invicem remoti; antennæ testaceæ, corpore longiores; prothorax lateribus hyalinis valde dilatatis et rotundatis; cerci picei, gracillimi, longissimi; alæ hyalinæ, testaceo venosæ, abdomen longe superantes; alæ anticæ latæ, membranaceæ, alæ posticæ vitta sub-costali fusca abbreviata.

♀. Testaceous, fusiform, smooth, shining. Head hardly extending beyond the prothorax. Eyes red, wide apart. Antennæ testaceous, slender, longer than the body. Prothorax a little longer than half its breadth, the pellucid lamina on each side much dilated; fore border truncated; sides very much rounded; hind border straight. Cerci piceous, very long and slender. Legs moderately long and slender; spines slender. Wings pellucid, extending much beyond the abdomen; veins testaceous. Fore wings broad; five exterior veins forked before they join the costa; transverse sectors regular. Hind wings with a brown abbreviated sub-costal stripe. Length of the body 6 lines (= 12·7 mm.) of the wings 15 lines (= 31·7 mm.).

Hab: Sarawak. In Mr. Saunders' collection.

Phyllodromia variegata, Brunner von Wattenwyl.

Phyllodromia variegata, Brunner. Abhandl. Senekenb. Ges. XXIV, p. 205, pl. XVI, fig. 10 (1898).
Phyllodromia variegata, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).
Phyllodromia variegata, Shelford. Gen. Ins. fasc. 73, p. 14 (1908).

Vertex parum latus, castaneus. Frons castanea, lineolis et punctis testaceis variegata. Pronotum transversum, disco castaneo, lineolis et punctis testaceis variegato, utrinque late pellucide marginato. Elytra castanea, maculis pallidis irregulariter delineatis ornata. Alæ infumatæ, vena ulnari 3-4 ramosa. Pedes testacei. Abdomen nigrum. Cerci pallidi, apice infuscati. ♀.

long. corp.	♀	9 mm.
long. pron.		2·8 mm.
lat. pron.		3·5 mm.
long. elytr.		11· mm.

Hab: Java.

Phyllodromia puncticollis, Brunner von Wattenwyl.

Phyllodromia puncticollis, Brunner. Abhandl. Senckenb. Ges. XXIV, p. 205, pl. XVI, fig. 10 (1898).
Phyllodromia puncticollis, Kirby. Syn. Cat. Orth. Vol. I, p. 93 (1904).
Phyllodromia puncticollis, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Picea. Vertex liber, cum fronte castaneus. Pronotum magnum, transversum, postice levissime rotundatum castaneum, marginibus lateralibus parum pallidioribus, disco punctis pallidis dense consperso. Elytra castanea, pallide variegata, campo marginali pallido et fusco et dense punctulato. Alæ infumatæ, vena ulnari 5-ramosa. Pedes castanei. Abdomen nigrum. ♀.

long. corp.	♀	12 mm.
long. pron.		4 mm.
lat. pron.		5·2 mm.
long. elytr.		13 mm.

Hab: Borneo.

Phyllodromia notulata, Stål (Plate I, fig. 2).

Blatta notulata, Stal. Eugenie's Resa, Orth. p. 308 (1858).
Phyllodromia hieroglyphica, Brunner. Syst. Blatt. p. 105 (1865).
Allacta notulata, Kirby. Syn. Cat. Orth. Vol. I, p. 100 (1904).
Phyllodromia notulata, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Brunner's description is as follows:

Griseo testacea, pellucens. Pronoto disco orbiculari testaceo, lineolis fuscis confertissimis picto, margine laterali hyalino, postico tenue-fusco. Elytris testaceis, fusco-variegatis. Alis hyalinis. ♂ ♀.

Long.					
corporis	♂	11	mm.	♀ 10·5	mm.
pronoti		3	mm.	2·8	mm.
pron. transv.		4	mm.	4	mm.
elytrorum		11	mm.	10·	mm.

Hab: Borneo (Brunner). Java (Shelford). Tahiti (Brunner). The Raffles Museum contains specimens from Singapore, the Semangko Pass (Selangor-Pahang) and Bukit Kutu (Selangor).

Phyllodromia polygrapha, Walker.

Blatta polygrapha, Walker. Cat. Blatt. B. M. p. 222 (1868).
Allacta polygrapha, Kirby. Syn. Cat. Orth. Vol. I, p. 100 (1904).
Phyllodromia polygrapha, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

♀. Pallide testacea fusiformis; caput prothoracem sat superans, piceo fasciatum, frontis disco, fasciis duabus maculisque quatuor anterioribus ferrugineis; oculi invicem sat late remoti; antennæ piceæ, basi testaceæ; prothorax disco saturate fusco lituram cruciformem lituram annuliformem lineasque duas contortas pallide testaceas includente, lateribus late dia-

phanis, margine postico recto; pedes pallidi; femoribus nigricante vittatis tibiis tarsisque fusco fasciatis; alæ anticæ abdomen superantes, plagis paucis venisque albidis, costa basi diaphana; alæ posticæ cinereæ, nigricante venosæ.

♀. Pale tastaceous, fusiform, smooth, shining. Head extending rather beyond the prothorax; a broad piceous band on the fore part of the vertex; disk of the front ferruginous; face with two ferruginous bands and with four intermediate ferruginous spots. Eyes black, rather wide apart. Antennæ piceous, testaceous at the base. Prothorax somewhat longer than half its breadth, broadly pellucid and with brown dots on each side; disk dark brown, with pale testaceous marks; these consist of a cruciform mark in front, an irregular ringlet near the hind border, and a serpentine mark on each side; fore border truncated: sides rounded, slanting outward to the hind border, which is straight. Legs moderately long and stout; femora with a blackish stripe above and with slender spines beneath; tibiæ and tarsi with brown bands. Wings extending beyond the abdomen. Fore wings semicoriaceous, rather broad, with whitish veins, and with a few whitish patches; costal space pellucid for one-third of the length from the base; costa slightly rounded; veins prominent; intermediate longitudinal veins distinct; transverse sectors regular. Hind wings cinereous; veins blackish.

Length of the body 5 lines (=10·5 mm.); of the wings 12 lines (=25·4 mm.).

Hab: Chan-ti-bon, Siam. In Mr. Saunders' collection.—Kuching, Sarawak (Oxford Museum).

Phyllodromia anceps, Krauss.

Blatta anceps, Krauss. Semon's Zool. Forsch. Austral. u. Mal. Arch., Vol. V, p. 749 (1903).

Phyllodromia anceps, Shelford. Gen. Ins. fasc. 73, p. 14 (1908).

♀. Sordide flava, fascia fusca inter oculos signata. Caput a pronoto haud obtectum. Antennæ pone basin fuscescentes. Pronotum semiorbiculare, antice et postice subtruncatum, planum, margine late hyalino, disco lineis fuscis valde flexuosis dense obsito. Elytra angusta, campo mediano a basi fere usque ad apicem infuscato; elytrum sinistrum apicem versus venulis longitudinalibus nonnullis nodulosis instructum. Alæ infumatæ, fuscovenosæ, vena ulnari 3-ramosa. Pedes sordide flavi, tibiis supra circa insertionem spinarum fusco-notatis. Abdomen supra subtusque apicem versus infuscatum, anguste ovale. Lamina supraanalis transversa, postice in medio subelevata, sub-emarginata. Cerci subtus infuscati. Lamina sub-genitalis semiorbicularis, convexa, retrorsum in medio compressa, in carinulam brevem elevata et ita quasi acuminata.

longitudo	corporis	♀ 10·5	mm.
„	pronoti	2	mm.
latitudo	„	3	mm.
longitudo	elytrorum	11·6	mm.

Hab: Tjibodas (Java).

Krauss adds: *B. punctulata* (Brunner) von Ober-Birma und insbesondere *B. hieroglyphica* (Brunner) von Borneo und Taiti sehr nahestehend. Von ersterer unterscheidet sie sich durch grössere Statur und die im Mittelfelde gebräunten Elytren sowie die anders geformte Lamina subgenitalis ♀, von letzterer durch die braune Binde zwischen den Augen, die schmäleren im Mittelfelde gleichmässig gebräunten Elytren, wobei Adern und Zwischenräume von gleicher Farbe sind, während bei *hieroglyphica* die Adern blass und nur die Zwischenräume braun gefärbt sind, und endlich durch die hinten nur leicht, nicht "tief" ausgerandete Lamina supra-analis ♀.

Phyllodromia obtusifrons, Walker.

Blatta obtusifrons, Walker. Cat. B. M. p. 226 (1868).
Ischnoptera obtusifrons, Kirby. Syn. Cat. Orth. Vol. I, p. 81 (1904).
Phyllodromia obtusifrons, Shelford. T. E. S. London, 1906, p. 493; Gen. Ins. fasc. 73, p. 13 (1908).

Walker gives the dimensions of this species as follows: length of body 5 lines (= 10·5 mm.); of the 'wings' (*i.e.* tegmina) 12 lines (= 25·4 mm.). For the rest we substitute Shelford's description.

♀. Fulvo-testaceous. Head castaneous, antennæ twice as long as the body. Pronotum trapezoidal, barely covering vertex of head, posterior margin very slightly angled, sides only slightly deflexed, disc marked with castaneous dots and lines symmetrically arranged. Tegmina with marginal field equalling half the total breadth, radial vein bifurcated, the lower branch ramose and sending its branches to the apical part of the anterior margin, eleven costals, anterior ulnar with fine branches, posterior ulnar simple. Ulnar vein of wings with four branches. Supra-anal lamina shortly produced; sub-genital lamina ample, semi-orbicular; cerci elongate. Insertions of tibial and femoral spines marked with fuscous.

Hab: Sarawak (Wallace).

Phyllodromia nebulosa, Shelford.

Phyllodromia nebulosa, Shelf. A. M. N. H. (7), XIX, p. 32 (1907); Gen. Ins. fasc. 73, p. 13 (1908).

♂. Head testaceous; four longitudinal lines on the vertex, three indistinct transverse bands on the face, castaneous. Pronotum trapezoidal, lateral margins hyaline, disk marbled

with castaneous and testaceous. Tegmina clear testaceous, with numerous irregular castaneous markings occurring between the veins; ten to eleven costal veins, five longitudinal discoidal sectors. Wings hyaline, veins testaceous, mediastinal vein with two branches; eight costal veins, their apices clavately incrassated; ulnar vein with four branches. Abdomen infuscated; supra-anal lamina triangular; sub-genital lamina ample, semiorbicular, with two styles, the margin of the lamina emarginate at their points of insertion; cerci long, testaceous, base and apex fuscous. Legs testaceous, the tibiae banded with fuscous; armature of femora as in the preceding species (*i.e. P. nimbata,* Shelford.)

♀. All the castaneous markings on the head more distinct; supra-anal lamina transverse, slightly emarginate; subgenital lamina very large, its posterior margin slightly and asymmetrically emarginate.

Total length	♂ 10 mm.	♀ 11 mm.
Length of tegmina	9 mm.	8 mm.

Hab: Kuching, Sarawak; three examples (Oxford Museum).

The small size of the species and the marbling of the tegmina with darker markings serve to distinguish it from any of the described Oriental forms; its nearest ally appears to be *P. ignobilis,* Wlk., from Sula Islands.

Phyllodromia megaspila, Walker.

Blatta megaspila, Walk. Cat. Blatt. B. M. p. 98 n. 66 (1868).
Blatta arborifera, Walker. Cat. Blatt. B. M. p. 100 (1868).
Allacta megaspila, Kirby. Syn. Cat. Orth. Vol. I, p. 100 (1904).
Phyllodromia megaspila, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

♀. Pallide flava, sat lata; caput nigro vittatum; frons et facies nigræ, flavo marginatæ; antennæ fuscæ, corpore longiores; prothorax disco nigro guttas tres cingulumque angulosum pallide flava includente, lateribus dilatatis hyalinis rotundatis reflexis; abdomen nigrum lateribus flavo maculatis; cerci nigro bifasciati; tibiæ nigro cinctæ; alæ anticæ plagis duabus magnis connexis spatioque postico fuscis; alæ posticæ nigro-cinereæ.

♀. Pale yellow, nearly elliptical, rather broad, smooth, shining. Head extending a little beyond the prothorax, with a black stripe on the vertex; front and face black, bordered with pale yellow. Eyes black, wide apart. Third joint of the palpi black, pale yellow at the tip. Antennæ brown, slender, setulose, pale yellow at the base, a little longer than the body. Prothorax with a black disk, which includes three pale yellow dots, one in front and one on each side behind, the three encircled by a zigzag interrupted pale yellow ringlet; sides hyaline, dilated, rounded and reflexed; hind border

straight. Mesothorax, metathorax and abdomen piceous, the latter with transverse yellow spots along each side, not notched at the tip. Cerci lanceolate, pilose, with two black bands, about one third of the length of the abdomen. Legs elongate; femora setose; tibiæ with black bands; tarsi black, very slender, pale yellow towards the base. Wings extending somewhat beyond the abdomen. Fore wings a little longer than the hind wings, with two large brown connected patches; hind part mostly or wholly brown, this hue more prevalent in the right wing than in the left wing; costa slightly rounded; costal area very broad; three last costal veins forked; transverse sectors numerous; anal furrow strongly marked. Hind wings blackish cinereous, broad; veins black; costal veins forked near the tip; anal area with few transverse sectors. Length of the body 5 lines (= 10·5 mm.); of the wings 12 lines (= 25·4 mm.).

Hab: Java. From Mr. Argent's collection. (Walker).—Kuching, Sarawak (Oxford Museum).

Phyllodromia marmorata, Walker.

Blatta marmorata, Walker. Cat. Blatt. B. M. Suppl. p. 140 (1869).

Allacta marmorata, Kirby. Syn. Cat. Orth. Vol. I, p. 100 (1904).

Phyllodromia marmorata, Shelford. Gen. Ins. fasc. 73, p. 13, pl. II, fig. 1 (1908).

♀. Pallide livida, fusiformis; caput latum, prothoracem paullo superans, guttis discoque anteriore nigris; oculi invicem remoti; prothorax plaga magna nigro-fusca, lateribus valde rotundatis; pectus et abdomen nigro-fusca; cerci longi; pedes breviusculi, sat robusti; alæ anticæ abdomen longe superantes, fusco pallido submebulosæ, plagis duabus nigro-fuscis; alæ posticæ diaphanæ.

♀ pale livid, fusiform, smooth, shining. Head rather broad, extending a little beyond the prothorax; vertex with black dots on the hind border; disk of the front black. Eyes pale reddish, wide apart. Antennæ pale livid. Prothorax a little longer than half its breadth, much narrower in front; fore border truncated; sides much rounded; hind border straight; a large blackish brown irregularly oval patch in the disk, undulating on each side. Pectus and abdomen blackish brown. Cerci pale livid, long. Legs pale livid, rather short and stout. Wings extending much beyond the abdomen. Fore wings slightly clouded with pale brown, adorned with two blackish brown patches, one near the base, the other at a little beyond the middle; costa rounded. Hind wings pellucid; veins pale. Length of the body 4 lines (= 8·4 mm.); of the wings 10 lines (= 21 mm.).

Hab: Mount Ophir (Malay Peninsula). In Mr. Saunders' collection.

Phyllodromia picturata, Shelford.

Phillodromia picturata, Shelf. A. M. N. H. (7), XIX, p. 30 (1907); Gen. Ins. fasc. 73, p. 13 (1908).

♂. Head testaceous, with castaneous markings, forming a symmetrical design. Pronotum transversely elliptical, lateral margins hyaline; disk of the pronotum pale testaceous, with castaneous markings composed of irregular spots, and two central longitudinal lines; a few minute castaneous points in the hyaline margins. Tegmina hyaline testaceous, with castaneous spots disposed along the veins, denser at two points in the marginal field, forming two indistinct maculae; an oblique castaneous fascia on the right tegmen extending from the middle of the anal field to the apical third of the radial vein; mediastinal vein with two branches, radial vein not bifurcated, twelve costal veins; anterior ulnar vein sending several branches to the sutural margin, posterior ulnar vein simple; anal vein somewhat sinuate, its apex suddenly bent inwards. Wings hyaline; nine costal veins, the six basal clavately incrassated, the apical three ramose; ulnar vein with five branches. Abdomen infuscated above, testaceous, marbled with fuscous below; supra-anal lamina short, transverse; subgenital lamina ample, somewhat irregular, the left style larger than the right and curved (cerci mutilated). Legs testaceous; tibiae banded with castaneous; tarsi fuscous except the basal two thirds of the first joint; front femora not armed beneath; mid and hind femora sparsely spined; apical spines $\frac{1}{0}$, $\frac{1}{1}$, $\frac{1}{1}$; no genicular spine on front femora.

Length of body 9 mm.; length of tegmina 10 mm.; pronotum 2·2 × 4·5 mm.

Hab: Singapore, Botanic Gardens (H. N. Ridley); one example (Oxford Museum).

The species in the characters presented by the femora and supra-anal lamina resembles the Ectobinae, but the wing-structure is typically Phyllodromine.

Phyllodromia hewitti, Shelford.

Phyllodromia hewitti, Shelf. A. M. N. H. (7), XIX, p. 33 (1907); Gen. Ins. fasc. 73, p. 13 (1908).

♂. Fulvo-castaneous. Antennae equal to total length of body, fuscous except at base. Pronotum trapezoidal, smooth, shining, sides deflexed, not covering vertex of head, with obscure darker markings, posterior margin slightly produced. Tegmina with radial vein bifurcated, twenty-one costal veins, discoidal area with nine longitudinal sectors. Wings with marginal area somewhat coriaceous; mediastinal vein with five branches, radial vein bifurcated from near base; twelve costals; ulnar vein with three branches; a prominent triangular apical area. Front femora with eleven long spines on anterior mar-

gin beneath, the more distal closely set together; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$; no geniculer spines on front femora. Supra-anal lamina triangular; sub-genital lamina produced, highly irregular in appearance; no styles.

Total length 21 mm.; length of body 18 mm.; length of tegmina 18 mm.

Hab: Kuching, Sarawak. [No. 27.]

Shelford adds: This species, which I have pleasure in naming after Mr. J. Hewitt, Curator of the Sarawak Museum, has all the appearance of an *Ischnoptera*, but the wing-venation is that of a typical *Phyllodromia*; it is, perhaps, most nearly allied to *P. ferruginea*, Br.

Phyllodromia elegans, Walker.

Blatta elegans, Walk. Cat. Blatt. B. M. p. 226 (1868).
Phyllodromia elegans, Kirby. Syn. Cat. Orth. Vol. I, p. 92 (1904).
Phyllodromia elegans, Shelford. Gen. Ins. 73, p. 13 (1908).

♂. Testacea, fusiformis; caput fulvum, prothoracem paullo superans; oculi extantes, invicem remoti; palpi apice picei; antennæ piceæ, gracillimæ, corpore valde longiores: prothorax longiusculus, disco piceo lineam liturasque duas latas furcatas testaceas includente; cerci graciles, longissimi; pedes longiusculi, sat graciles; alæ anticæ semicoriaceæ, sub-hyalinæ, abdomen longe superantes; alæ posticæ saturate cinereæ, nigricante venosæ.

♂. Testaceous, fusiform, smooth, shining. Head tawny, extending a little beyond the prothorax. Eyes prominent, wide apart, like the head in colour. Third joint of the palpi piceous. Antennæ piceous, very slender, very much longer than the body. Prothorax much narrower in front, very much longer than half its breadth; disk piceous, including a broad forked testaceous mark on each side of a testaceous line; fore border slightly truncated; sides slightly reflexed and rounded; hind border hardly rounded. Cerci slender, setose, very long. Legs rather long and slender; spines, slender, long. Wings extending much beyond the abdomen. Fore wings semi-coriaceous, slightly hyaline; two forked veins; intermediate longitudinal veins distinct; transverse sectors regular. Hind wings dark cinereous; veins blackish. Length of the body 5¼ lines (= 11·6 mm.) of the wings 13 lines (= 27·5 mm.).

Hab: Sarawak. In Mr. Saunders' collection.

Phyllodromia picteti, Fritze.

Phyllodromia picteti, Fritze. Rev. Suisse Zool. VII, p. 337 (1899).
Phyllodromia picteti, Kirby. Syn. Cat. Orth. Vol. I, p. 90 (1904).
Phyllodromia picteti, Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

♂ ♀. Rufo-testacea, subtus straminea. Antennæ concolores, articulis 1-2 testaceis. Pronotum parvum, corneum,

disco posterius notis 2 obliquis, fusco-rufis, marginibus flavicantibus. Elytra semicoricea. Alæ campo antico hyalino, venis flavis, campo postico nebuloso, venis brunneis. Campus anterior angustus, apice coarctatus; campo marginali flavicante, venis costalibus crassiusculis; vena discoidali ante medium furcata, venis media et ulnari valde arcuatis; hac apice biramosa. Apex area intercalata distincta, anguste trigonali bivenosa, instructus, margine apicali arcuato. Pedes straminei, coxis basi brunneo-maculatis; tibiis supra fusco-punctulatis. Abdomen plus minus infuscatum.

♀. Lamina supraanalis majuscula trigonalis; ultimum segmentum aequans, vel leviter superans, apice rotundata, vel leviter truncata; ultimum segmentum ventrale margine medio sinuato.

♂. Lamina supraanalis grandis, elongata trigonalis, prominula, apice rotundata ac incisa. Lamina infragenitalis trigonalis, apice stylis 2.

long corp.	14 mm.
long. pronot.	3 mm.
latit. „	3·5 mm.
long. elytr.	11·5-12 mm.

Hab: Java.

Pyllodromia supellectilium, Serville.

Blatta supellectilium, Serville. Hist. Ins. Orth. p. 114 (1839).
Blatta cubensis, Saussure. Rev. Zool. (2), Vol. XIV, p. 165 (1862).
Blatta capensis, Saussure. ibid. Vol. XVI, p. 210 (1864).
Blatta phalerata, Saussure. Mém. Soc. Genève, Vol. XVII, p. 151, pl. I, fig. 16 (1864).
Phyllodromia supellectilium, Brunner. Syst. Blatt. p. 98 (1865).
Blatta insisa, Walker. Cat. Blatt. B. M. p. 109 (1868).
Blatta extenuata, Walker. ibid. p. 221 (1868).
Ischnoptera quadriplaga, Walker. ibid. p. 221 (1868).
Blatta subfasciata, Walker. Cat. Blatt. B. M. Suppl. p. 26 (1871).
Blatta transversalis, Walker. ibid. p. 25 (1871).
Blatta figurata, Walker. ibid. p. 24 (1871).
Phyllodromia delta, Kirby. A. M. N. H. (7), Vol. V, p. 280 (1900).
Phyllodromia supellectilium, Kirby. Syn. Cat. Orth. Vol. I, p. 88 (1904).
Phyllodromia supellectilium, Shelford. Gen. Ins. fasc. 73, p. 11, pl. II, fig. 2 (1908).

Brunner's description is as follows:

Corpore testaceo-pallido. Capite parvo, oculis approximatis. Pronoto elongato, disco fusco, margine laterali lineâ valde arcuatâ delineato, hyalino. Elytris testaceis, vittâ longitudinali castaneâ, versus apicem evanescenti et in triente primo fasciâ pallidâ transversâ interruptâ. Venâ inframediâ ramos obliquos in marginem suturalem emittenti (in modum Ectobiarum). Alis hyalinis, margine antico albo-opaco. ♂ ♀.

	long.
corporis	♂ 11 mm.

pronoti	3 mm.
pron. transv.	4 mm.
elytrorum	11 mm.

Hab: Cosmopolitan.—The Raffles Museum contains two specimens from Christmas Island which apparently belong to this species.

Phyllodromia nimbata, Shelford.

Phyllodromia nimbata, Shelf. A. M. N. H. (7), Vol. XIX (1907), p. 31.

♂. Testaceous. Head with a rufous band between the eyes and sometimes with a narrower band between the antennal sockets. Pronotum trapezoidal; lateral margins hyaline; disk testaceous, with rufous markings symmetrically disposed. Tegmina clear testaceous; ten costal veins, five longitudinal discoidal sectors. Wings hyaline; mediastinal vein with two branches; eight to nine costal veins, their apices clavately incrassated; ulnar veins with four branches. Abdomen infuscated above, testaceous below, with fuscous margins; supra-anal lamina trigonal, slightly emarginate; sub-genital lamina triangularly produced, with two styles; cerci elongate, testaceous. Legs testaceous; front femora armed on anterior margin beneath with a series of spines, the most distal short and serried; apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{1}$; all the femora with genicular spines.

♀. Head entirely rufo-testaceous; supra-anal lamina transverse; sub-genital lamina ample, semi-orbicular, posterior margin slightly but widely emarginate.

Length of body	♂ 11 mm.	♀ 8·1 mm.
Length of tegmina	10 mm.	9·8 mm.

Hab: Kuching, Sarawak, five examples (Oxford Museum).

Shelford adds: The species is undoubtedly closely allied to *Phyllodromia liturifera,* Stål, the type of which is now before me, but differs in the following points:—It is smaller: the head is not marked with three castaneous bands; the coloration of the tegmina is different; the wings are clear hyaline and their veins pale testaceous; the costal veins are more numerous; the supra-anal lamina is slightly more produced and its apex is emarginate; the sub-genital lamina is narrower. It is quite evident that de Saussure correctly identified *P. liturifera*, Stål. (Mél. Orthopt. ii p. 56, 1869), and his detailed description of the species is perfectly accurate in every point.

Phyllodromia quadri-punctata, n. sp. (Plate I, fig. 1).

♀. Head orange yellow, eyes black. Antennæ filiform, first two joints orange, the remainder black. Pronotum orange, lighter at the sides, with four black spots, two of which are situated just in front of the centre of the pronotum, and two along its posterior margin. Body mottled orange

and black. Tegmina orange. Coxæ orange; tibiæ orange except their proximal and distal ends which are black; tarsi black, slightly yellow at the joints.

total length	20 mm.
pronotum, length	4·5 mm.
pronotum, width	5 mm.
tegmina, length	15 mm.
cerci	3·8 mm.

Hab: Semangko Pass, Selangor-Pahang boundary, 2700 feet, March 1912 (Raffles Museum). Bukit Kutu, Selangor, 3000 feet, April 1915 (Raffles Museum).

Genus ***DURYODANA,*** Kirby.

Kirby, Annals and Mag. of Nat. History (7), Vol. XII, p. 274 (1903).

Shelford, Gen. In. fasc. 73, p. 15 (1908).

Differs from *Phyllodromia,* Serville, in the very large size of the maxillary palpi.

Duryodana palpalis, Walker.

Blatta palpalis, Walk. Cat. Blatt. B. M. p. 225 (1868).

Phyllodromia palpata, Brunner. Abhandl. Senckenb. Ges. Vol. XXIV. p. 207, pl. XVI, fig. 13 (1898).

Duryodana palpalis, Kirby. A. M. N. H. (7) XII, p. 274 (1903); Syn. Cat. Orth. Vol. I, p. 101 (1904).

Duryodana palpalis, Shelford. Gen. Ins. fasc. 73, p. 15, pl. I, figs. 10 and 11 (1908).

♂. Picea, fusiformis; caput nigrum, prothoracem non superans, fascie albo trifasciata; oculi invicem remoti; palpi nigri, longissimi, articulis 3o. 4o. que dilatatis; antennæ nigræ, gracillimæ, albido fasciatæ; prothorax longiusculus, lateribus rotundatis sub-hyalinis sub-reflexis, margine postico vix rotundato; cerci longissimi, articulis pallido fasciatis; pedes robusti, coxis albo plagiatis; alæ anticæ semicoriaceæ, abdomen longe superantes, macula basali lutea; alæ posticæ cinereæ, piceo venosæ.

♂. Piceous, fusiform, smooth, shining. Head black, not extending beyond the prothorax; sockets of the antennæ and three bands on the face white. Eyes piceous-red, wide apart. Palpi black, very long; second and third joints fusiform, dilated. Antennæ black, very slender, with a dingy whitish band near the base. Prothorax much longer than half its breadth; fore border truncated; sides rounded, slightly hyaline and reflexed; hind border hardly rounded. Cerci very long, tips of the joints pale. Legs stout, moderately long; coxæ with white patches; femora with short spines. Wings extending much beyond the abdomen. Fore wings semi-coriaceous; a luteous basal spot equally distant from the costa and hind border; intermediate longitudinal veins distinct; transverse

sectors regular; costa very slightly rounded towards the base. Hind wings cinereous; veins piceous. Length of the body 5 lines (= 10·5 mm.); of the wings 12 lines (= 25·4 mm.).

This species represents a very peculiar section of *Blatta*, and will probably be considered as the type of a new genus.

Hab: Sarawak. In Mr. Saunders' collection.

We add Brunner's description of this species:

Picea. Vertex vix liber. Frons picea, punctis et lineolis testaceis variegata. Palpi nigri, in ♂ magni, articulis tribus terminalibus dilatatis. Antennæ fuscæ, in medio annulo pallido ornatæ. Pronotum antice et postice truncatum, piceum, mar- ornatæ. Pronotum antice et postice truncatum, piceum, marginibus lateralibus pallidis, punctis geminis pallidioribus in disco (ægre distinguendis) ornatum. Elytra picea, in basi ipsa aurantiaco-maculata. Alæ valde infumatæ, vena ulnari 3-ramosa. Pedes picei. Coxæ pallide fasciatæ. Abdomen nigrum. Cerci pallidi, apice et basi infuscati. ♂, ♀.

long. corp.		♂ 10·5 mm.	♀ 12 mm.
„	pron.	3·7 mm.	4 mm.
lat.	„	4·3 mm.	4 mm.
long.	elytr.	11·5 mm.	11·5 mm.

Hab: Sarawak.

Genus ***PSEUDOPHYLLODROMIA,*** Brunner von Wattenwyl.

Brunner, Nouveau Système des Blattaires, p. 111 (1865).
Shelford, Gen. Ins. fasc. 73, p. 17 (1908).

Head very broad, not covered by the pronotum, eyes widely separate. Pronotum transversely elliptical. Tegmina somewhat attenuated towards apex, anterior ulnar vein ramose, posterior ulnar vein simple, angled. Wings with ulnar vein ramose. Supra-anal lamina triangular, produced. Front femora with a few long spines on anterior margin beneath, succeeded distally by close-set piliform setæ.

Pseudophyllodromia pulcherrima, Shelford. (Plate III, fig. 15).

Pseudophyllodromia pulcherrima, Shelf. T. E. S., Lond., 1906, pp. 266-7, pl. XVI, fig. 3.—Gen. Ins. fasc. 73, p. 17 (1908).

♂ and ♀. Piceous. Head large and broad projecting beyond the pronotum, with a narrow golden line between the eyes; antennæ fine, setaceous, longer than the body. Pronotum trapezoidal, sides not deflexed, bordered all round with a narrow golden line; the line is marginal on the anterior and posterior margins of the prothorax but sub-marginal on the lateral margins. Tegmina with the mediastinal area, a horse-shoe-shaped vitta astride the radial vein near its base, and an elongate vitta in the apical part of the marginal field, golden (faded to white in dried specimens). The surface of the tegmina is somewhat rugulose, marginal field broad, nine

costal veins, ulnar vein with nine oblique branches, no division of the vein into an anterior and posterior trunk, anal vein strongly impressed. Wings infuscated, especially strongly in marginal field and at apex, a clear hyaline spot in marginal field; nine somewhat irregular costal veins, ulnar vein with four rami, no apical triangle, first axillary tri-ramose. Abdomen piceous, supra-anal lamina of male transverse, of female slightly produced, emarginate; abdomen beneath piceous, the centre of the last few segments rufous, sub-genital lamina of the male short, transverse, of the female large, ample; cerci moderate, piceous, apical three joints golden above. Legs piceous, apices of coxæ and trochanters golden, tarsi and tibial spines rufous. Front femora unarmed beneath, mid-femora with two spines on anterior margin, three on posterior margin, hind femora with two on anterior margin and four on posterior margin, all the femora with apical spines on both margins and with genicular spines. The genital apparatus of the male appears to be very complicated. The ootheca is almost cylindrical, longitudinally finely striated, with a longitudinal serrulate crest, it is carried by the female with the crest uppermost and the contained eggs vertically disposed. The larvæ have the anterior and lateral margins of the pronotum, the lateral margins of the meso—and metanotum, two spots on the metanotum and on the fourth and fifth abdominal terga golden.

Total length 10 mm., length of tegmina 6 mm.

Shelford adds: This little cockroach is abundant in decayed wood; in general appearance it is unlike the South American species of the genus, but I can find no character of sufficient importance to entitle it to separate generic rank, unless the undivided trunk of the ulnar vein of the tegmina can be so regarded. An allied species occurs in Penang, but the unique example before me is in such bad condition that I prefer to await additional material before describing it. *Phyllodromia laticeps*, Wlk., and *P. laticaput*, Br., should also be referred to the genus *Pseudophyllodromia*.

Hab: Kuching, Sarawak (Shelford). The Raffles Museum contains specimens from Lundu, Sarawak (April 1913), Lio Matu, Sarawak (November 1914), and Bukit Kutu, Selangor (April 1915).

Pseudophyllodromia laticeps, Walker.

Blatta laticeps, Walk. Cat. Blatt. B. M. Suppl. p. 142 (1869).

Phyllodromia laticaput, Brunner. Abhandl. Senckenb. Ges. Vol. XXIV, p. 205, pl. XVI, fig. 8 (1898).

Phyllodromia laticeps, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).

Phyllodromia laticaput, Kirby. Syn. Cat. Orth. Vol. I, p. 93 (1904).

Pseudophyllodromia laticeps, Shelford. Gen. Ins. fasc. 73, p. 16, pl. I, fig. 8 (1908).

♀. Badia, fusiformis; caput rufum, latissimum prothoracem sat superans; oculi maximi, invicem sub-approximati; palpi fusci, apice testacei; antennæ gracillimæ; prothorax longiusculus, flavo bivittatus, lateribus diaphanis rotundatis; pectus testaceum; venter ochraceus, lateribus fuscis; pedes testacei; alæ anticæ semicoriaceæ, abdomen sat superantes, vitta costali hyalina pallide flava; alæ posticæ nigro-fuscæ, costa testacea.

♀. Chestnut-brown, fusiform, smooth, shining. Head red, very broad, extending somewhat beyond the prothorax. Eyes brown, very large, slightly approximate to each other. Palpi brown, tips testaceous. Antennæ brown, setose, very slender. Prothorax much longer than half its breadth, with a pale yellow stripe and an exterior pellucid space on each side; fore border slightly rounded, sides rounded; hind border straight. Pectus testaceous. Abdomen ochraceous beneath, broadly brown-bordered on each side. Legs testaceous, short, stout; spines of the femora short, slender. Wings extending rather beyond the abdomen. Fore wings semi-coriaceous, with a pale yellow hyaline costal stripe; intermediate longitudinal veins distinct: costa slightly rounded. Hind wings blackish brown; costa testaceous. Length of the body 4½ lines (=9·5 mm.) of the wings 10 lines (=21 mm.).

It seems to be most allied to *B. sordida*.

Hab: Singapore. In Mr. Saunders' collection.

We add Brunner's description: Vertex latus, a pronoto totus liber. Frons ferruginea, fusca variegata. Palpi filiformes, testacei, articulo ultimo triangulari, nigro. Pron. planiusculum, transversum, margine antico recto, disco nigro, antice et latere testaceo-marginato, postice tantum limbo angustissimo testaceo marginato. Elytra apicem versus attenuata, picea, margine antico toto albido. Alæ infumatæ, vena ulnari 4-ramosa. Pedes cum abdomine ferruginei. ♂.

long. corp.	♂ 10·5	mm.
„ pron.	3	mm.
lat. „	4·5	mm.
long. elytr.	11	mm.

Hab: Borneo (Brunei, Baram, Banguei).

Genus ***CERATINOPTERA,*** Brunner von Wattenwyl.

Brunner, Système des Blattaires, p. 75 (1865).
Shelford, Gen. Ins. fasc. 73, p. 19 (1908).

Tegmina very variable in size, sometimes reaching the apex of the abdomen, sometimes much reduced, always lanceolate in the male, sometimes quadrate in the female. Wings well-developed, reduced or rudimentary, ulnar vein simple, occasionally bifurcate, never ramose. Supra-anal lamina of male usually triangular. Femora strongly armed.

Ceratinoptera sundaica, Fritze.

Ceratinoptera sundaica, Fritze. Rev. Suisse Zool. VII, p. 338 (1900).
Ceratinoptera sundaica, Kirby. Syn. Cat. Orth. Vol. I, p. 98 (1904).
Ceratinoptera sundaica, Shelford. Gen. Ins. fasc. 73, p. 19 (1908).

♀. Castanea. Caput castaneum, ore et antennis rufo-castaneis, occipite et vertice in medio flavidis, oculis remotis. Pronotum longiusculum, antice coarctatum, trapezium, marginibus lateralibus subrectis, latiuscule luteis, disco tota longitudine castaneo, in medio rufescente (hoc propter obsolete fusco-bivittato). Elytra subcornea, nitida, abdomine paulo breviora, fulvo-castanea, area basali pellucida; venis discoidalibus paucis, longitudinalibus. Alæ explicatæ, nebulosæ, venis brunneis; venis costalibus apice clavatis, fuscis; vena ulnari 2-3 ramosa. Abdomen supra testaceum, marginibus et apice fuscis, ultimis segmentis luteo maculatis; subtus rufo-testaceum, marginibus et apice castaneis. Lamina supraanalis transversa, brevis, margine postico arcuato vel subangulato. Cerci lutei subtus infuscati, supra basi marginibus et apice imo fuscis. Ultimum segmentum ventrale utrinque sinuatum, apice compressum, fissum. Pedes fulvo-testacei; tibiæ fusco-maculatæ. Long. corp. 13·5; pronot. 4; latit. 5·4; elytr. 10 mm.

Hab: Java.

Ceratinoptera fulva, Brunner von Wattenwyl.

Temnopteryx fulva, Brunner. Syst. Blatt. p. 85 (1865).
Temnopteryx fulva, Kirby. Syn. Cat. Orth. Vol. I, p. 104 (1904).
Ceratinoptera fulva, Shelford. Gen. Ins. fasc. 73, p. 19 (1908).

Parva, tota fulva. Elytris apice rotundatis. Pedibus hirsutis. ♂.

Long.		
corporis	♀ 10	mm.
pronoti	3	mm.
pron. transv.	3·8	mm.
elytrorum	3·5	mm.

Cette espèce se distingue par sa couleur uniformément fauve. Les élytres sont plus étroits et plus arrondis à l' extrémité que dans l'espèce précédente*. Les pattes portent, à côté des épines, des poils assez gros et courts.

Hab: Java (Musée de Bruxelles).

Genus ***ALLACTA,*** Saussure and Zehntner.

Grandidier, Hist. Nat. Madag. Orth. Vol. I, p. 44 (1895).
Shelford, Gen. Ins. fasc. 73, p. 18 (1908).

Small species, very like *Phyllodromia* in appearance. Tegmina and wings usually shorter than the body. Median vein of wings absent or given off as a branch of the radial, sometimes branched; costal veins few and irregular; ulnar vein ramose. Supra-anal lamina rounded. Femora weakly spined.

* *i.e. C. inconspicua*, Brunner, from the Cape.

Allacta parva, Shelford.

Allacta parva, Shelf. T. E. S. London, 1906, p. 268; Gen. Ins. fasc. 73, p. 18 (1908).

♂. Head and antennæ testaceous, two pyriform vittæ on the frons castaneous. Pronotum transversely elliptical, castaneous, with a triangular testaceous mark on the centre of the anterior margin. Tegmina castaneous, mediastinal area and a transverse spot just before the middle of the tegmen continuous with it, hyaline; ten costal veins, anterior ulnar vein with three longitudinal rami, posterior trunk simple. Wings hyaline, six costal veins, the third, fifth and sixth bifurcate, their extremities swollen; radial vein bifurcate, ulnar vein with four branches. Femora moderately armed. Supra-anal lamina transverse, sub-genital lamina orbicular, with two styles. Cerci elongate.

Total length 8 mm., length of tegmina 6 mm.

Hab: Kuching, Sarawak. Two examples [No. 23].

Sub-family 3. NYCTIBORINAE.

None.

Sub-family 4. EPILAMPRINAE.

Shelford, Gen. Ins. fasc. 101, p. 1 (1910).

Antennæ setaceous, never plumose, very occasionally incrassated slightly. Pronotum variable in form. Tegmina coriaceous or corneous, fully developed or reduced. Wings fully developed, reduced or absent; mediastinal vein typically multiramose; costal veins irregular, ramose; ulnar vein with several incomplete rami. Supra-anal lamina: (♂) more or less quadrate with obtuse angles, (♀) sub-bilobate, produced. Femora armed beneath sparsely or strongly. Tarsi with distinct pulvilli, and in all but one genus * with arolia. Ovoviviparous or viviparous.

Key to the Malayan Genera of the Epilamprinæ.

(Adapted from Shelford, Gen. Ins. fasc. 101, pp. 2-3).

1. Tarsi very short, posterior metatarsus much shorter than the succeeding joints.

2. Form convex. Genus *Phlebonotus*, Saussure

2¹. Form depressed.

3. Tegmina and wings fully developed in both sexes. Genus *Apsidopis*, Saussure.

3¹. Tegmina truncate, quadrate. Wings absent. Genus *Compsolampra*, Saussure.

---

*. The Australian genus *Ataxigamia*, Tepper.

1¹. Tarsi longer, posterior metatarsus longer than, equal to, or very little shorter than the succeeding joints.

2. Posterior metatarsus entirely unarmed beneath.

3. Pronotum obtusely produced posteriorly.

Genus *Morphna*, Shelford.

3¹. Pronotum truncate posteriorly.

Genus *Homalopteryx*, Brunner, (pars).

2¹. Posterior metatarsus spined beneath.

3. Posterior metatarsus armed with spines beneath only at the base, its pulvillus produced towards the base of the joint.

Genus *Homalopteryx*, Brunner (pars).

3¹. Posterior metatarsus armed with spines beneath throughout the greater part of its length, its pulvillus apical.

4. Sexes dissimilar.

5. Vertex of head covered by pronotum.

Genus *Rhicnoda*, Brunner.

5¹. Vertex of head exposed. Genus *Calolampra*, Saussure.

4¹. Sexes similar.

6. Vertex of head covered by pronotum.

Genus *Pseudophoraspis*, Kirby.

6¹. Vertex of head exposed.

7. Wings truncate or acuminate at apex.

Genus *Rhabdoblatta*, Kirby.

7¹. Wings rounded at apex.

Genus *Epilampra*, Burmeister.

Genus ***PHLEBONOTUS***, Saussure.

Saussure, Mém. Soc. Genève, Vol. XVII, p. 141 (1863).
Shelford, Gen. Ins. fasc. 101, p. 5 (1910).

Male moderately convex, rather elongate; female very convex. Pronotum punctate, trapezoidal, anteriorly not covering vertex of head, posteriorly sub-truncate. Tegmina: (♂) exceeding the apex of the abdomen, coriaceous, venation well-marked, anal vein impressed, seriately punctate. (♀) not or barely exceeding apex of abdomen, corneous, venation obscure, anal vein absent, seriately punctate. Wings: (♂) as long as tegmina, anterior part rather narrow, vena dividens strongly curved, ulnar vein with numerous incomplete rami, posterior part ample, first axillary vein giving off near its apex numerous rami in a flabellate manner, (♀) reduced, rudimentary or absent, in the former case the posterior part is minute, the anterior part coriaceous. Femora very sparsely armed beneath. Tarsi short, metatarsi scarcely as long as the two succeeding joints, not spined beneath; all the pulvilli very large.

Phlebonotus pallens, Serville.

Phoraspis pallens, Serv. Ann. Sci. Nat. Vol. XXII, p. 43 (1831); Ins. Orth. p. 125, pl. III, fig. 4 (1839).

Phoraspis pallens, Blanchard. Ann. Soc. Ent. France, Vol. VI, p. 286, pl. X, fig. 1 (1837).

Phoraspis pallens, Burmeister. Handb. Ent. Vol. II, p. 492 (1838).
Epilampra cribrata, Saussure. Mém. Soc. Genève, Vol. XVII, p. 144, pl. I, fig. 10, 10*a* (1863); Vol. XX, p. 264 (1869).
Phoraspis pallens, Brunner. Syst. Blatt. p. 165 (1865).
Epilampra intacta, Walker. Cat. Blatt. B. M. p. 205 (1868).
Phoraspis pallens, Saussure. Mém. Soc. Genève, Vol. XX, p. 263 (1869).
Phlebonotus pallens, Kirby. Syn. Cat. Orth. Vol. I, p. 110 (1904).
Planes cribrata, Kirby. Syn. Cat. Orth. Vol. I. p. 111 (1904).
Phlebonotus pallens, Shelford. Gen. Ins. fasc. 101, p. 5, pl. I, figs. 3 and 4 (1910).

Serville's description (Ins. Orth. p. 125) is as follows:

Long. 8 à 9 lig. (=17 to 19 mm.). Corps entièrement d'un jaune pâle, assez luisant. Tête chargée d'une multitude de petits points enfoncés noirâtres. Mandibules ayant leurs dentelures noirâtres. Prothorax semi-orbiculaire, coupé droit postérieurement, chargé comme la tête de petits points enfoncés noirâtres, rangés en lignes longitudinales, vus à la loupe. Ailes un peu plus courtes que les élytres, d'un jaune clair, striées longitudinalement et réticulées. Abdomen brunâtre. Antennes un peu plus longues que la moitié du corps, pubescentes, d'un jaune pâle. Pattes jaunâtres. Indes Orientales.

For comparison we give Brunner's description:

Flavo-testacea. Pronoto magno, semiorbiculari. Elytris apice rotundatis, venâ scapulari flavâ. Alis maris (?) elytrorum longitudine, flavis, feminæ rudimentariis. ♂ (?) ♀.

Long.	♂	♀
corporis	20 mm.	17 mm.
pronoti	?	5·2 mm.
pron. transv.	?	9 mm.
elytrorum	?	14·5 mm.

Hab: Java, Assam, Bengal, Ceylon. (Shelford, Gen. Ins.).

Genus ***MORPHNA***, Shelford.

Shelford, Genera Insectorum, fasc. 101, p. 6 (1910).

Form rather depressed. Vertex of head covered or almost covered by pronotum, which is trapezoidal, sub-cucullate and posteriorly produced obtusely. Tegmina and wings fully developed exceeding the apex of the abdomen. Supra-anal lamina of typical Epilamprine shape. Cerci moderately long. Femora moderately armed beneath. Posterior metatarsus equal in length to succeeding joints: all the joints entirely unarmed beneath, their pulvilli large, pulvillus of metatarsus apical, but produced towards the base of the joint.

Morphna maculata, Brunner von Wattenwyl (Plate IV, fig. 19).

Epilampra maculata, Brunner. Syst. Blatt. p. 179 (1865).
Epilampra polyspila, Walker. Cat. Blatt. B. M. p. 197 (1868).
Molytria maculata, Kirby. A. M. N. H. (7), Vol. XII, p. 275 (1903); Syn. Cat. Orth. Vol. I, p. 114 (1904).
Morphna maculata, Shelford. Gen. Ins. fasc. 101, p. 6, pl. I, figs. 7 and 7*a* (1910).

Fusco-testacea. Occipite strigis longitudinalibus tribus fuscis. Fronte fuscâ. Antennis fusco-ferrugineis. Pronoto magno, lato, caput totum obtegente, fusco-consperso, maculâ mediâ quadratâ, magnâ et duabus aliis minoribus fuscis. Elytris latissimis, planis, testaceis, fusco-conspersis, lineâ elevatâ, brevi, nitidâ, nigrâ, venæ scapulari appositâ. Alis ferrugineis. Pedibus rufo-castaneis, unicoloribus. Abdomine testaceo, fusco-consperso.

	Long.
corporis	♂ 43 mm.
pronoti	12 mm.
pron. transv.	17·5 mm.
elytrorum	40 mm.

Hab: Java ? (Brunner).—Shelford (T. E. S. 1906, p. 496) gives the following additional localities: ♂ Singapore (Wallace); ♀ Sarawak (Wallace) and states that *M. shelfordi*, Kirby, is merely the Bornean race.—The Raffles Museum contains specimens from Bukit Lantai (S. Ujong); Semangko Pass (Selangor-Pahang); Bukit Kutu (Selangor), and Gunong Kledang (Perak).

Morphna badia, Brunner von Wattenwyl (Plate IV, fig. 20).

Epilampra badia, Brunner. Syst. Blatt. p. 189 (1865).
Epilampra dotata, Walker. Cat. Blatt. B. M. Suppl. p. 130 (1869).
Epilampra ramifera, Walker. Cat. Blatt B. M. Suppl. p. 132 (1869).
Molytria badia, Kirby. Syn. Cat. Orth. Vol. I, p. 114 (1904).
Molytria ramifera, Kirby. Syn. Cat. Orth. Vol. I, p. 114 (1904).
Epilampra badia, Rehn. Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 178 (1909).
Morphna badia, Shelford. Gen. Ins. fasc. 101, p. 7 (1910).

Corpore ferrugineo-testaceo. Antennis lividis. Pronotum parum deflexo, caput liberante, badio, nitido. Elytris latis, planis, apice valde obtusis, pronoto concoloribus. Alis apice valde obtusis, ferrugineo-pellucidis. ♂ ♀.—'Probablement Java.'

	Long.		
corporis	♂ 36 mm.	♀ 43 mm.
pronoti	10 mm.	11 mm.
pron. transv.	14 mm.	16 mm.
elytr.	38 mm.	41 mm.

Hab: Singapore, Sumatra, Borneo, Java (Shelford, Gen. Ins.): Trang, Lower Siam (Rehn); Sumatra (Rehn). The Raffles Museum contains specimens from the Botanic Gardens and Bukit Timah, Singapore. Also collected at Banting, Sarawak, by the Rev. G. Dexter Allen.

Genus ***HOMALOPTERYX,*** Brunner von Wattenwyl.

Brunner, Système des Blattaires, p. 195 (1865).
Shelford, Gen. Ins. fasc. 101, p. 7 (1910).

Form depressed. Pronotum anteriorly parabolic, completely covering or just failing to cover the vertex of the head, posteriorly truncate or sub-truncate. Tegmina and wings fully developed or reduced. Femora sparsely armed. Posterior metatarsi shorter than, or equal to, the remaining joints, armed beneath with a few spines at the base uniseriately or biseriately arranged, occasionally unarmed beneath.

Homalopteryx adusta, Walker.

Epilampra adusta, Walker. Cat. Blatt. B. M. Suppl. p. 131 (1869).
Homalopteryx adusta, Kirby. Syn. Cat. Orth. Vol. I, p. 115 (1904).
Homalopteryx adusta, Shelford. T. E. S. London, 1906, p. 497, pl. XXX, fig. 6; Gen. Ins. fasc. 101, p. 8 (1910).

Shelford describes this species as follows:

♀. Head testaceous, a cruciform marking on the front, vertex with small castaneous points, apex of maxillary palpi castaneous. Pronoum with the disc castaneous, the lateral margins broadly testaceous, marked with numerous castaneous points, the surface granular, two impressions on the disc, black, lateral margins slightly reflected, posterior margin with a row of larger granules. Tegmina testaceous heavily mottled with castaneous, marginal area paler, serio-punctate, just failing to reach extremity of abdomen. Abdomen beneath with the disc heavily mottled with castaneous, margins testaceous; supra-anal lamina bilobate, sub-genital lamina ample; cerci testaceous. Legs testaceous, dotted with castaneous, four spines on anterior margin of front femora, formula of apical spines $\frac{1}{0}$. $\frac{1}{1}$, $\frac{1}{0}$, no geniculer spine on front femora; posterior metatarsus shorter than remaining joints, spinous beneath, pulvillus not produced backwardly. Total length 23 mm.; length of tegmina 17 mm.; pronotum 8·5 mm. × 12 mm.

Hab: Sarawak (Wallace).

Homalopteryx major, Saussure.

Homalopteryx major, Sauss. Rev. Suisse Zool. Vol. III, p. 342 (1895).
Rhicnoda major, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904).
Homalopteryx major, Shelford. Gen. Ins. fasc. 101, p. 8 (1910).

♀. Fulvo-rufescens. Antennæ castaneæ. Pronotum latiusculum, margine postico paulo magis arcuato, tuberculis minutis elongatis notato; disco postice leviter ruguloso: partibus lateralibus et anterioribus dense minute granulatis tuberculisque minutis remote conspersis: margine anteriore leviter reflexo. Elytra ampla, sensim abdominis longitudine, apice late rotundata, punctis rufis minutis adspersa. Alæ hyalino-testaceæ. Pedes sparse rufo-punctati; femora anteriora margine antico spinis 5, dehinc spinulis minutis armata. Abdomen supra in medio fuscescens. Metatarsus posticus subtus carinatus, serie unica pilorum spinuliformium instructus; pulvillo apicali. Lamina supraanalis rotundata, in medio incisa, angulis emarginationis hebetatis. Venter fusco-rufo punctatus, segmentis utrinque impressione fusca.

long.	29·5 mm.
pron.	10 mm.
pron. latit.	16 mm.
elytr.	23·5 mm.

Hab: Java (Mus. Genavense).

Genus ***COMPSOLAMPRA,*** Saussure.

Saussure, Soc. Ent. Zurich, Vol. VIII, p. 58 (1893).
Shelford, Gen. Ins. fasc. 101, p. 6 (1910).

Pronotum covering vertex of head, posteriorly truncate. Tegmina quadrate, not extending beyond the first abdominal tergite. Wings absent. Femora sparsely armed, front femora unarmed on front margin beneath. Tarsi very short; posterior metatarsi shorter than the three succeeding joints, entirely unarmed beneath, their pulvilli large, produced towards the base.

Compsolampra liturata, Serville.

Blatta liturata, Serv. Ins. Orth. p. 103 (1839).
Blatta liturata, De Haan, Temminck, Verhandel., Orth. p. 58, pl. XVIII, fig. 8 (♂) (1842).
Opisthoplatia liturata, Brunner. Syst. Blatt. p. 201 (1865).
Periplaneta insolita, Walker. Cat. Blatt. B. M. p. 146. n. 59 (1868).
Epilampra quadrata, Saussure. Mém. Soc. Genève Vol. XXIII, p. 129 (1873).
Compsolampra liturata, Saussure. Rev. Suisse Zool Vol. III. p. 343 (1895).
Compsolampra liturata, Kirby. Syn. Cat. Orth. Vol. I, p. 116 (1904).
Calolampra quadrata, Kirby. Syn. Cat. Orth. Vol. I, p. 117 (1904).
Compsolampra liturata, Shelford. Gen. Ins. fasc. 101, p. 6, pl. I, fig. 6 (1910).

Long. près d'un pouce (= 25 mm.). Cette espèce singulière, dont malheureusement je ne connais que la femelle, est glabre et luisante. Tête d'un jaune roussâtre: le milieu de la face au-dessous des antennes est occupé par une bande brune longitudinale assez large, irrégulière sur ses bords. Prothorax lisse, assez grand, presqu'aussi long que large, très-arrondi antérieurement et sur les côtés, rebordé dans ces parties, coupé droit postérieurement, d'un jaune assez diaphane, sauf la partie centrale qui est brune. Elytres courtes, ne recouvrant guère que la base de l'abdomen, larges, carrées, rebordées sur les côtés, sans strie arquée, fortement pointillées partout et luisantes; leur marge extérieure débordant l'abdomen, jaune et diaphane comme les bords du prothorax; le disque est brun, bordé latéralement d'une fine liture longitudinale d'un jaune clair, et un peu arquée. Ailes paraissant entièrement nulles. Abdomen brun-foncé, luisant en dessus; chaque segment offre au bord postérieur, une série transversale de très-courtes lignes élevées, longitudinales, assez distinctes. Dessous du corps d'un brun clair; segments abdominaux jaunes latéralement, ce qui

forme une bande marginale de cette couleur, de chaque côté du ventre. Pattes jaunâtres; toutes les cuisses un peu épineuses en dessous; jambes garnies de fortes épines. Antennes jaunâtres ♀. Java.

We add Brunner's description:

Fusco-testacea. Pronoto oblongo, postice truncato, impresso-punctato, disco elevato, rufo-fusco, maculis lateralibus nigris, margine laterali pallido. Elytris quadratis, truncatis, venis nullis, margine pallidis, disco fuscis, lineâ longitudinali elevatâ flavâ ornatis. Abdomine subtus vittis duabus intramarginalibus fuscis. ♂ ♀.

Long.	♂	♀
corporis	19 mm.	24 mm.
pronoti	6 mm.	7 mm.
pron. transv.	7·5 mm.	9 mm.
elytrorum	5·5 mm.	4·5 mm.

Hab: Java; China (Shelford, Gen. Ins.).

Genus ***APSIDOPIS,*** Saussure.

Saussure, Revue Suisse de Zoologie, Vol. III, p. 338 (1895).
Shelford, Gen. Ins. fasc. 101, p. 6 (1910).

Eyes very convex, not widely separated on vertex of head. Pronotum cucullate, anteriorly produced completely covering the head, posteriorly strongly produced. Tegmina and wings completely developed in both sexes, the latter sometimes with acuminate apex. Femora moderately armed. Tarsi short, completely unarmed beneath, sometimes fimbriate; posterior metatarsus equal in length to the two succeeding joints, all the pulvilli very large.

Apsidopis wallacei, Shelford.

Apsidopis wallacei, **Shelf. A. M. N. H. (7), Vol. XIX, p. 38 (1907); Gen. Ins. fasc. 101, p. 6 (1910).**

♀. Pale testaceous. Frons concave and transversely striated; a chevron-shaped depression at base of clypeus and two marks between the eyes castaneous; antennæ fuscous except basal joint; eyes 1½ mm. apart. Pronotum cucullate, of the form characteristic of the genus, punctate and with numerous minute fuscous or castaneous maculæ. Tegmina semicoriaceous, densely serio-punctate between the veins in the basal two thirds, in the apical third the punctures merge into quadrangular interspaces between numerous reticulated interstitial veins, a few minute fuscous dots are scattered over the tegmina; mediastinal vein with ten branches; seven ramose costal veins; nine anal veins, the first ramose. Wings angulated at the apex as in the genus *Derocardia*, Sauss.; marginal area testaceous with fuscous spotting at apex, the apex semicoriaceous; mediastinal vein multiramose; costal veins irregular, the interspaces filled by reticulated interstitial

veins; ulnar vein with nineteen branches. Supra-anal lamina ample, prominent, bilobed; subgenital lamina semiorbicular; cerci slender and short. Front femora with five spines on middle of anterior margin beneath, piliform setæ extending from them to apex, two spines on posterior margin; mid and hind femora with three to four spines on each lower margin; formula of apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{0}$; minute genicular spines on mid and hind femora, none on front femora; posterior metatarsus shorter than remaining joints, its pulvillus produced proximally.

Length of body 30 mm.; length of tegmina 35 mm.; pronotum 11 mm. × 12·5 mm.

Hab: Sarawak (Wallace; Wilson Saunders collection, Oxford Museum).

Shelford adds: The species is close to *A. oxyptera*, Wlk., also from Borneo, which exhibits the same characters of punctuation of the tegmina; but *A. oxyptera* is smaller, more rufous in colour, the proportions of the pronotum are different and the pronotum is less closely punctate, but more densely covered with castaneous dots. Both species can be distinguished from *A. acutipennis*, Sauss., by their larger size.

Apsidopis oxyptera, Walker.

Epilampra oxyptera, Walker. Cat. Blatt. B. M. p. 199 (1868).
Derocardia oxyptera, Kirby. Syn. Cat. Orth. Vol. I, p. 119 (1904).
Apsidopis oxyptera, Shelford. Gen. Ins. fasc. 101, p. 6 pl. I, fig. 5 (1910).

♂. Testacea, fusiformis; caput fusco strigatum; oculi invicem approximati; prothorax semihyalinus, fusco conspersus caput superans, antice subcarinatus, margine postico valde producto fusco-strigato; venter fusco fasciatus et guttatus; lamina supra-analis divisa; pedes breviusculi; alæ abdomen longe superantes, apice acuminatæ; alæ anticæ striga subcostali obscuriore, fasciis obscurioribus undulatis subobsoletis; alæ posticæ pallide cinereæ, costa apicem versus testaceo fusco-guttata.

♂. Testaceous, fusiform, smooth, shining. Head small with four longitudinal brown streaks, two on the fore part of the vertex and two on the front. Eyes reddish, approximate. Antennæ piceous, testaceous at the base. Prothorax semihyaline, extending beyond the head, thickly and minutely punctured, with a slight broad keel which is obsolete towards the hind border; disk slightly excavated on each side of the keel; fore border much rounded; hind border much elongated, with six longitudinal brown streaks. Abdomen beneath with irregular darker bands and with many brown dots; supra-anal lamina bilobed, hyaline. Cerci lanceolate, slender, blackish towards the tips. Legs stout, rather short; arolia large. Wings extending much beyond the abdomen, attenuated towards the tips, which are acute. Fore wings coriaceous, very

thickly and minutely punctured; a darker streak along the humeral trunk emitting branches along the veins towards the costa; some indistinct darker undulating incomplete bands; under side with a double row of brown dots along the costa. Hind wings pale cinereous, with a whitish costal streak, beyond which the costal space is testaceous with many brown dots. Length of the body 12 lines (=25·4 mm.); of the wings 34 lines (=71·8 mm.).

Hab: Sarawak. From Mr. Wallace's collection.

Apsidopis cyclops, Saussure.

Apsidopis cyclops, Saus. Rev. Suisse Zool. Vol. III, p. 338, pl. IX, fig. 7 (1895).
Apsidopis cyclops, Kirby. Syn. Cat. Orth. Vol. I, p. 119 (1904).
Apsidopis cyclops, Shelford. Gen. Ins. fasc. 101, p. 6 (1910).

♂. Sat minuta, depressa, fulvo-aurantia. Caput subangustum; oculi convexi, arcum semiorbicularem formantes, in vertice incrassati ac tumidi, subcontigui, vix sejuncti. Antennæ, primo articulo excepto, brunnescentes. Pronotum subplanum, leviter cucullatum, verticem superans; margine antico late arcuato: margine postico retro angulatim supra scutellum producto, angulo rotundato, processu breviter grosse strigoso Superficies remote impresso-punctata. Cucullus et discus postice coriacei, rufo-fulvi; margo anterior in medio anguste, latere latissime, pellucens.—Elytra semi-coriacea abdomen valde superantia, parallela, apicem versus haud attenuata, oblique truncata, margine sutural rectissimo; tota, basi excepta, flavido-translucida, rufo-punctata et minute irrorata. Vena mediastina crasse subtus prominula, ramulis 5 acutis, 2 subtilibus instructa; ad originem primi rami subtus tumefactionem obferens. Venæ costales 5 logitudinales, 5*a* furcata. Superficies in dimidia parte proximali dense punctata; areæ anales 2-4-seriatim punctatæ. Alæ hyalinæ, venis flavis: campus anterior subflavicans, sat angustus, campum posteriorem superans, apice parabolicus, rotundatus; margine costali ultra medium maculis albidis opacis. Pedes concolores. Femora omnia spinis apicalibus minimis: $\frac{1}{1}$, $\frac{0}{1}$, $\frac{1}{0}$; subtus margine postico spina unica; margine antico: *anteriora* pilosello, spinulis ante medium 2; *intermedia* et *postica* spinis 3. Tarsi postici breviusculi, pulvillis majusculis. Metatarsus brevis, subtus haud serrulatus, basi longiuscule pilosus; pulvillo basin versus productus. Abdomen pallide limbatum. Segmentum dorsale penultimum angulis utrinque in processum brevem rotundatum divergentem productis, de reliquo haud perspicuum. Lamina supraanalis transverse quadrata, vix obtusissime excisa, apice sulco partita. Lamina infragenitalis fere eodemmodo transversa, vix prominula, margine subarcuato; stylis clavatis, basi constrictis, in angulis ipsis exsertis, his ad exsertionem haud excisis. Long. 18·8; pronot. 6·3; latit. 8·5; elytr. 21 mm.

Hab: Borneo meridionalis.

Genus ***PSEUDOPHORASPIS,*** Kirby.

Kirby, Ann. Mag. Nat. Hist. (7), Vol. XII, p. 275 (1903).
Shelford, Gen. Insect. fasc. 101, p. 12 (1910).

Eyes rather close together. Pronotum completely covering vertex of head, subcucullate, posteriorly obtusely produced. Tegmina and wings fully developed in both sexes, their apices rounded or slightly truncate. Femora moderately armed beneath. Tarsi long, posterior metatarsi longer than the succeeding joints, biseriately spined beneath, its pulvillus apical, remaining joints with large pulvilli, entirely unarmed.

Pseudophoraspis nebulosa, Burmeister (pl. I, fig. 4).

Epilampra nebulosa, Burm. Handb. Ent. Vol. II, p. 505 (1838).
Blatta jaspidea, Serville. Ins. Orth. p. 88 (1839).
Epilampra jaspidea, Saussure. Mém. Mex., Blatt. p. 138 (1864).
Epilampra nebulosa, Brunner. Syst. Blatt. p. 193, pl. IV, figs. 19 A-E (1865).
Epilampra jaspidea, Brunner. Syst. Blatt. p. 184 (1865).
Epilampra nebulosa, Walker. Cat. Blatt. B. M. p. 194 (1868).
Epilampra jaspidea, Walker. ibid. p. 193 (1868).
Epilampra congrua, Walker. ibid. p. 199 (1868).
Epilampra conformis, Walker. ibid. p. 200 (1868).
Epilampra scita, Walker. ibid. p. 200 (1868).
Epilampra deplanata, Walker. ibid. p. 201 (1868).
Epilampra nebulosa, Krauss. Semon Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 747 (1903).
Pseudophoraspis nebulosa, Kirby. Syn. Cat. Orth. Vol. I, p. 119 (1904).
Pseudophoraspis nebulosa, Shelford. Gen. Ins. fasc. 101, p. 12, pl. II, fig. 4 (1910).

Pallida pellucens lævissima, pedibus luteis unicoloribus; corpore toto nigro-consperso, elytris nebulosis fasciatisque. Long. 1″ 2‴ (=29·6 mm.).—Java.

Brunner's description is as follows:

Fulva, lævissima, lucida. Capite a pronoto toto obtecto, depresso. Pronoto subplano, cum elytris subtilissime fusco-punctato. His valde convexis in feminâ, planioribus in mare, apice oblique truncatis. Alis apice emarginatis. Pedibus corpore concoloribus. ♂ ♀.

Long.	♂	♀
corporis	27 mm.	23-32 mm.
pronoti	8·5 mm.	6·7-9·5 mm.
pron. transv.	11 mm.	10-13 mm.
elytrorum	28 mm.	20-30 mm.
fem. post.	9 mm.	6·5-9·5 mm.
tib. post.	10 mm.	7-10 mm.
tars. post.	5 mm.	4-6 mm.

Hab: Malay Peninsula, Borneo, Sumatra, Java (Shelford, Gen. Ins.) Buitenzorg, Java (Krauss). The Raffles Museum contains specimens from the Botanic Gardens and Bukit Timah, Singapore; from Maxwell's Hill, Perak, and Baram, Borneo.

Pseudophoraspis miranda, Shelford.

Epilampra miranda, Shelf. T. E. S. 1906, pp. 269-270.
Pseudophoraspis miranda, Shelf. Gen. Ins. fase. 101, p. 12 (1910).

♂. Allied to *E. goliath*. Fulvo-testaceous. Head with very convex front, eyes more remote than ocellar spots, vertex with three longitudinal stripes. Pronotum shaped as in *E. moloch*, Rehn, and *E. goliath*, mihi, but somewhat more cucullate, only just covering the vertex of the head, with scattered punctures and with two crescentic impressions on the disc. Tegmina with marginal field equal to half the total breadth, mediastinal vein with seven branches; speckled with paler spots, radial vein at base fuscous. Wings hyaline, veins flavo-testaceous. Supra-anal lamina bilobate, not extending beyond the sub-genital lamina which is quadrate and slightly asymmetrical (styles mutilated); cerci moderate, acuminate; ventral segments with a black stigma on each side. Front femora with seven spines on anterior margin beneath, mid-and-hind-femora with three to four spines on anterior margin, two on posterior margin; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{0}$, no genicular spine on front femora. Posterior metatarsus barely equal in length to remaining joints, which are not spined beneath, pulvilli not margined with spines.

Total length, 55 mm.; length of body, 44 mm.; length of tegmina, 42 mm.; pronotum, 18 mm. × 11 mm.

Hab: Mt. Penrissen, Sarawak 3500′ (R. Shelford coll.). One example [No. 16].

Genus ***RHABDOBLATTA,*** Kirby.

Kirby, Ann. Mag. Nat. Hist. (7), Vol. XII, p. 276 (1903).
Shelford, Gen. Ins. fasc. 101, p. 12 (1910).

Vertex of head freely exposed. Pronotum with its greatest width behind the middle, posteriorly strongly produced. Tegmina and wings fully developed, the latter truncate at the apex, the former sometimes truncate at the apex, sometimes rounded. Femora moderately armed. Tarsi long, posterior metatarsus biseriately spined beneath, second and third joints with no spines at their bases, pulvilli large with spines at the sides.

Rhabdoblatta buqueti, Serville.

Blatta buqueti, Serv. Hist. nat. Ins. Orth. p. 93 (1839).
Hedaia buqueti, Kirby, Syn. Cat. Orth. Vol. I (1904) p. 123.
Rhabdoblatta buqueti, Shelford, Gen. Ins. fasc. 101, p. 13 (1910).

♀. Long. 15 lig. (=31·7 mm.) non compris les elytres. Plus grande que la précédente, mais lui ressemblant par la forme du prothorax. Corps entièrement d'un jaune testacé. Prothorax très finement pointillé; bord postérieur sinué obliquement, sa pointe médiane avancée entre les elytres et simulant un petit écusson. Ces dernières ovalaires, ob-

longues, dépassant l'abdomen de quatre à cinq lignes environ, chargées de stries d'une extrême finesse. Ailes transparentes, de la longueur des élytres. Antennes et pattes de la couleur du corps: toutes les cuisses offrant quelques épines en dessous.

Hab: Java.

Rhabdoblatta javanica, Saussure.

Epilampra javanica, Sauss. Mém. Soc. Genève. Vol. XX, p. 269 (1870).
Hedaia javanica, Kirby. Syn. Cat. Orth. Vol. I, (1904), p. 124.
Rhabdoblatta javanica, Shelford. Gen. Ins. fasc. 101, p.. 13 (1910).

Rufo-fusco-testacea; pronoto laevi postice angulato, caput liberante, confertissime fusco-punctulato; elytris abdomen vix superantibus rufo-fuscis, ocellis pallidioribus conspersis, apice rotundatis, vena mediastina fusco-marginata; alis antice ferrugineis postice subhyalinis; lamina supra-anali, haud prominula, rotundata. ♀.

Longueur	du	corps	30 mm.
„		de l'elytre	27 „
„		du prothorax	9 „
Largeur	„	„	12 „

♀. D'un brun-fauve testacé. Tête saillante, testacée, veinée de brun-ferrugineux avec un dessin testacé à 6 branches sur la face; le front un peu brunâtre. Antennes brunes-testacées. Yeux très-écartés, distants de $3\frac{1}{2}$ mm.

Prothorax lisse, très-peu convexe; le bord antérieur parabolique, le postérieur sinué, formant au milieu une saillie prononcée au-dessus de l'ecusson. Toute la surface très densément pointillée de brun; le milieu devenant obscur brunâtre; les bords latéraux restant plus clair et finement liserés de brun; le bord postérieur offrant des lignes noirâtres longitudinales.

Elytres dépassant à peine l'abdomen, arrondis au bout; d'un brun ferrugineux, semés de points et de taches plus claires; la base un peu plus brune. Le bord antérieur arque; le champ marginal large; la veine médiastine grosse, bordée de noir et fournissant 4 branches. La partie recouverte de l'elytre droit presque de même couleur que le reste, ayant aussi de taches pâles.

Ailes arrondies au bout; le champ antérieur gris-ferrugineux, un peu tachété de pâle à l'extrémité à l'aile gauche; le champ postérieur légèrement enfumé, à nervures brunes.

Pattes brunes-testacées; les épines brunes à leurs insertions.

Abdomen brunâtre. Plaque suranale cornée, arrondie, point débordante; légèrement échancrée au milieu. Cercis petits.

Cette espèce est voisine de la *Pfeifferæ*, suivant M. Brunner qui l'a examinée. Elle rentrerait dans la section B, b, du système de cet auteur.

Hab: Java.

Rhabdoblatta pfeiferae, Brunner von Wattenwyl.

Epilampra pfeiferae, Brunner. Syst. Blatt. p. 188 (1865).
Hedaia pfeifferae, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904).
Epilampra pfeiferae, Rehn. Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 178 (1909).
Rhabdoblatta pfeifferae, Shelford. Gen. Ins. fasc. 101, p. 13 (1910).

Testacea. Pronoto parvo, caput fere totum liberante, punctis fuscis confertissimis. Elytris fusco-nebulosis, angustis, acuminatis, venis parum impressis, areâ mediastinâ angustâ. ♀.

Long.	♀
corporis	33 mm.
pronoti	8 mm.
pron. transv.	10 mm.
elytrorum	36 mm.

Hab: Borneo (Vienna Museum).—Sumatra (Rehn).

Rhabdoblatta structilis, Rehn.

Epilampra structilis, Rehn. Bull. Amer. Mus. Nat. Hist. Vol. XXVI (1909), p. 178, fig. 1.
Rhabdoblatta structilis, Shelford, Gen. Ins. fasc. 101, p. 13 (1910).

Type ♀. Closely allied to *E. procera,* Brunner, from Java, but differing in the smaller size, the slightly different shape of the pronotum and more heavily maculate character of the same, as well as the more distinctly marbled tegmina. This species belongs in the section to which the name *Hedaia* has been applied by Saussure.

Size moderately large; form elongate-ovate; surface subglabrous. Head with the vertex alone not covered by the pronotum, the interocular space narrower ventrad than dorsad; eyes strongly constricted, subreniform, antennæ not exceeding half the length of the body. Pronotum septilateral, slightly transverse, the greatest length contained about one and one-third times in the greatest breadth, the three faces of the cephalic margin with the angles slight and rounded, the two faces of the caudal margin obtuse-angulate, the angle very narrowly rounded; disk considerably depressed laterad, caudal section somewhat elevated. Tegmina exceeding the apex of the abdomen by the length of the pronotum and the exposed portion of the head together, greatest width slightly exceeding that of the pronotum, costal margin arcuate in the proximal half, sutural margin nearly straight, apex narrowly rounded and obliquely subtruncate on the sutural side; veins distinctly and finely marked, anal field elongate, subpyriform, the anal sulcus distinct and joining the sutural margin at a point distant from the base about two-fifths the length. Cephalic femora with five or six distinct ventral median spines, median and caudal femora with three to four spines on the ventral margins. Supra-anal plate large, rounded and with a

narrow triangular median incision; cerci slightly compressed. blunt, slightly exceeding the supra-anal plate; subgenital plate broad, margin sinuato-rotundate.

General colours bay and cream-buff, the two blotched and stippled one on the other. Head pale with an irregular pattern of dark spots on the vertex; face with a dark transverse rectangular interantennal spot, ventrad of which is a longitudinal bar of the same shade: eyes seal brown; antennæ mars brown. Pronotum pale, entirely overlaid with uniformly distributed fine dark points, in addition to which there is a speckling of larger spots of the same colour, these becoming tear-shaped along the caudal margin, while there also is a poorly indicated median clepsydral pattern, the swelling dorsad of the insertion of the tegmina rather indefinitely lined as well. Tegmina with the colour contrasts quite marked in places and in others broadly blended, the effect being distinctly marbled: the principal points of pale colour are two about the middle of each tegmen and several blotches in each anal field, sutural section aside from that of the anal field uniform bay. Abdomen cinnamon, sprinkled with fine dark points laterad and also with a series of lateral spots of the same colour. Femora lined dorsad with dark, limbs otherwise chiefly pale cinnamon.

Length of body	29·5 mm.
Length of pronotum	7·9 mm.
Greatest width of pronotum	9·8 mm.
Length of tegmen	33· mm.
Greatest width of tegmina	10·5 mm.

Hab: Bencoolen, Sumatra (A. Schmiedell).

Rhabdoblatta parvicollis, Walker.

Epilampra parvicollis, Walker. Cat. Blatt. B. M. Suppl. p. 133 (1869).
Hedaia parvicollis, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904).
Rhabdoblatta parvicollis, Shelford. Gen. Ins. fasc. 101, p. 13 (1910).

♂. Fusca, fusiformis: subtus testacea: caput prothoracem paullo superans: prothorax testaceus, parvus, fusco conspersus, testaceo pallido marginatus, litura discoidali scutiformi, margine postico producto angulato; alæ ferrugineæ, sat angustæ, apice truncatæ, abdomen longissimi superantes; alæ anticæ maculis nonnullis magnis argaque apicali testaceo-cinereis; alæ posticæ subcoriaceæ, venulis transversis albidis.

♂. Brown, fusiform, smooth, shining, testaceous beneath. Head extending a little beyond the prothorax. Eyes lurid, moderately wide apart. Antennæ piceous, slender, testaceous at the base. Prothorax testaceous, small, broader than long, narrowly bordered with pale testaceous, minutely and very thickly speckled with brown; a scutcheon-shaped mark in the disk, distinguished by its impressed border, much broader in front than behind; fore border slightly truncated and arched,

sides very obtusely angular; hind border elongated and angular. Abdomen with the supra-anal lamina bilobed. Cerci slender. Legs rather short and slender: spines black. Wings ferruginous, rather narrow, truncated at the tips, extending very much beyond the abdomen. Fore wings coriaceous, corneous towards the base; apical space and a few large spots testaceous-cinereous; anterior longitudinal veins forked; intermediate veins distinct; under side with a costal piceous stripe. Hind wings slightly coriaceous; transverse sectors whitish. Length of the body 12 lines (=25·4 mm.): of the wings 34 lines (=72 mm.).*

Hab: Sarawak. In Mr. Saunders' collection.

Rhabdoblatta procera, Brunner von Wattenwyl.

Epilampra procera, Brunner. Syst. Blatt. p. 192, (1865).

Epilampra borrei, Saussure. Mém. Soc. Genève, Vol. XXIII, p. 127, pl. X, fig. 44 (1873).

Epilampra procera, Krauss. Semon. Forsch. Austr. Mal. Arch. Vol. V, p. 748, (1903).

Hedaia procera, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904). ..

Rhabdoblatta procera, Shelford Gen. Ins. fasc 101, p. 13 (1910).

Cinerea, fusco-marmorata, oblonga. Capite a pronoto non obtecto, testaceo, fronte fuscâ. Antennis nigris, corporis longitudine. Pronoto parvo, griseo, fusco-consperso. Elytris angustis, oblongis, acuminatis, griseis, fusco-marmoratis. Pedibus fuscis, pallide-marginatis. Abdomine supra fusco, segmentis ventralibus pallide-marginatis. Laminâ supra-anali femina magnâ, medio incisâ, testaceâ, cercis hac longioribus, fuscis. ♀.

	Long.	♀
corporis	37	mm.
pronoti	8·5	mm.
pron. transv.	10	mm.
elytrorum	40	mm.

Hab: Java (Brunner).—Tjibodas, Java (Krauss).

Rhabdoblatta obtecta, n. sp. (Plate III, fig. 17).

I establish this new species with considerable hesitation. The species falls in all respects clearly into the genus *Rhabdoblatta*, except that the vertex of the head is not freely exposed, but very distinctly covered by the pronotum.

♀. Head entirely covered by the pronotum, fulvous. Eyes black. Pronotum of sandy buff colour, extremely finely dotted castaneous, posterior margin obtusely angled. Tegmina exceeding the body, truncate, buff coloured, finely punctuate anteriorly, less distinctly posteriorly. Wings exceeding the body, truncate, buff coloured, irregularly blotched castaneous. Abdomen ventrally buff, with numerous fine castaneous dots and a large blotch in the centre of each segment.

* I am doubtful as to whether these measurements are correct. The total length of the specimen in the Oxford Museum is only 43 mm.

total length	♀	42	mm.
length of pronotum		11	mm.
width „ „		14·5	mm.
length of tegmina		30	mm.

Hab: Botanic Gardens, Singapore, July, 1911. One example (♀).

Genus ***EPILAMPRA,*** Burmeister.

Burmeister, Handbuch d. Entomologie, Vol. II, p. 504 (1838).
Shelford, Gen. Ins. fasc. 101, p. 13 (1910).

Head with vertex exposed. Pronotum obtusely produced posteriorly. Tegmina and wings fully developed in both sexes, only rarely shorter than the body. Supra-anal lamina: (♂) subquadrate with obtuse angles, (♀) sub-bilobate. produced. Femora strongly armed. Tarsi long; posterior metatarsi exceeding the succeeding joints in length, biseriately spined throughout the greatest part of their length, their pulvilli apical; second to fourth joints typically with small pulvilli and bise:iately spined beneath.

Epilampra quadrinotata, Walker.

Epilampra quadrinotata, Walker. Cat. Blatt. B. M. p. 209 (1868).
Heterolampra quadrinotata, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).
Epilampra quadrinotata, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

♀. Pallide testacea, fusiformis; caput prothoracem paullo superans, maculis tribus anticis angulatis atomisque nigris; oculi invicem remoti; palpi apice picei; antennæ piceæ; prothorax rufo dense conspersus, guttis anticis posticisque plagisque quatuor nigris, margine postico subproducto; abdomen maculis dorsalibus lateralibus quadratis maculisque ventralibus discoidalibus nigris; alæ anticæ rufescente dense nebulosæ, abdomen longe superantes, lituris costalibus et subcostalibus fuscis; alæ posticæ rufescente cinereæ.

♀. Pale testaceous, fusiform, smooth, shining. Head extending a little beyond the prothorax, slightly speckled with black; three angular black spots, one on the front and one on each side of the face. Eyes pale, wide apart. Third joint of the palpi piceous. Antennæ piceous, testaceous towards the base. Prothorax thickly red-speckled; fore border and hind border with black dots; four black patches, two in the disk and two more widely separated near the hind border, which is slightly elongated; sides rounded, slanting outward from the fore border, which is slightly truncated. Abdomen above with large quadrate black spots along each side; under side with a black spot on the the fore border of each segment; supra-anal lamina bilobed. Legs stout, rather short; femora with short slender spines; tibiæ with black points at the base of the spines. Wings extending much beyond the abdomen; tips rounded. Fore wings thickly overspread with reddish marks which form

irregular undulating transverse lines; some dark brown marks along the costa and along the humeral trunk. Hind wings and covered part of the right fore wing reddish cinereous. Length of the body 8 lines (= 17 mm.); of the wings 18 lines (= 38 mm.).

It resembles *E. stipata*, *E. micropila*, and *E. caliginosa* in structure, but the hind border of the prothorax is less elongated.

Hab: Sarawak. From Mr. Wallace's collection.

Epilampra plena, Walker.

Epilampra plena, Walker. Cat. Blatt. B. M. p. 210 (1868).
Epilampra fervida, Walker. Cat. Blatt. B. M. p. 211 (1868).
Heterolampra plena, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).
Heterolampra fervida, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).
Epilampra plena, Shelf. T. E. S., 1906, p. 499; Gen. Ins. fasc. 101, p. 15 (1910).

♀. Testacea, fusiformis, subtus pallide testacea; caput prothoracem perpaullo superans, vertice sordido, plaga transversa fasciaque anteriore transversa nigricantibus: oculi invicem remoti; antennæ fulvæ: prothorax rufo conspersus et guttatus, guttis anticis posticisque nigris, vittis duabus nigricantibus abbreviatis nigro testaceoque notatis, margine postico subproducto; abdomen plagis lateralibus atomisque nigris; alæ anticæ rufo dense variæ, abdomen longe superantes, guttis costalibus plagisque subcostalibus nigris; alæ posticæ fuscæ.

♀. Testaceous, fusiform, smooth shining, paler beneath. Head extending very little beyond the prothorax; vertex dingy, paler about the eyes; a blackish transverse patch between the sockets of the antennæ and an anterior slender curved blackish band. Eyes piceous, wide apart. Antennæ tawny. Prothorax much narrower in front, longer than half its breadth, thickly covered with minute red speckles and with some red dots; some black dots along the fore border and a row of larger black dots along the hind border; two broad abbreviated blackish stripes formed by more or less confluent speckles and accompanied by various black and pale testaceous dots; fore border not truncated; sides slightly rounded, slanting outward to the hind border, which is slightly elongated. Abdomen beneath with a row of black patches on each side and with black speckles of various size; supra-anal lamina bilobed. Cerci lanceolate, slender. Legs moderately long and stout; tibiæ with black points at the base of the spines. Wings rounded at the tips, extending much beyond the abdomen. Fore wings thickly mottled with red; costa with black dots; a row of black patches along the humeral trunk. Hind wings brown. Length of the body 9 lines (= 19 mm.); of the wings 18½ lines (= 39 mm.).

The head extends less beyond the prothorax than that of *E. quadrinotata*, and the prothorax is less narrowed in front.

Hab: Menado, Celebes. In Mr. Saunder's collection (Walker).

Borneo; Papua (Shelford, Gen. Ins.).

Shelford (T. E. S. 1906, p. 499) makes the following interesting observations on this species:

E. plena, Walk. [Borneo, Celebes]; *E. puncticollis*, Walk. [Borneo]; *E. quadrinotata*, Walk. [Borneo]; *E. laricollis* Sss. [Java], and *E. flavomarginata*, Shelf. [Borneo] form a congeries of species that it is not easy to discriminate; the differences in coloration are slight, and it is almost impossible to express them in writing. The species are small, averaging 25 mm. in total length; they are amber-coloured or testaceous, the ground-colour however being obscured by densely placed and minute castaneous or fuscous maculæ, and vermiculations, so that the insects appear to be of some shade of castaneous. The pronotum does not cover the vertex of the head, its posterior margin is obtusely angled and produced, its surface is quite smooth. The posterior legs are long and slender, the metatarsus particularly so, and the pulvilli are margined with spines. The veins of the tegmina are strongly marked, and between them at the base only of the tegmen appear series of shallow ill-marked punctures. *E. puncticollis*, Wlk., from Borneo, can be distinguished by two converging impressions on the front part of the pronotum; *E. laricollis*, Sss., from Java, is possibly synonymous; *E. quadrinotata*, Wlk., from Borneo, is smaller (20 mm. total length), has four fuscous maculæ on the pronotum, and the supra-anal lamina is notched deeply, not merely cleft; *E. plena*, Walk., from Celebes and New Guinea, has no impressions on the pronotum and is larger than *quadrinotata*, the form *ferrida* is less heavily marked and is of a rufous hue; *E. flavomarginata*, Shelf., can be distinguished by its coloration. A revision of the genus *Epilampra* is much to be desired, but without a comparison of all the types it is a matter of such consummate difficulty that it has been shirked by every student of the Blattidæ. The species noted above might well be considered typical of Kirby's genus *Heterolampra*, but Mr. Kirby in his 'Synonymic Catalogue of Orthoptera' includes in it all the old world species of *Epilampra* that cannot be fitted into the genera *Hedaia* and *Calolampra*; the result is a heterogeneous assemblage, whose diagnostic generic characters are in most cases merely their locality labels.

Epilampra puncticollis, Walker.

Epilampra puncticollis, Walk. Cat. Blatt. B. M. p. 74 (1868).
Heterolampra puncticollis, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).
Epilampra puncticollis, Shelford, Gen. Ins. fasc. 101, p. 15 (1910).

♂. Testacea; vertex nigro bistrigatus; frons nigro conspersus; antennæ nigræ, corpore paullo longiores; prothorax nigro subconspersus, margine antico vix truncato, lateribus rotundatis perparum reflexis, margine postico producto; cerci longi; pedes graciles; alæ abdomen longe superantes; alæ posticæ obscure cinereæ, alas anticas paullo superantes.

♂. Testaceous, fusiform, smooth, shining. Head extending a little beyond the prothorax, with two black longitudinal streaks on the vertex; front black-speckled; Eyes testaceous, rather wide apart. Antennæ black, slender, setulose, testaceous at the base, a little longer than the body. Prothorax very thickly black-speckled; fore border hardly truncated: sides rounded, very slightly reflexed; hind border prolonged. Abdomen with the supra-anal lamina bilobed. Cerci long. Legs slender; femora with several slender spines. Wings extending much beyond the abdomen. Fore wings thickly and minutely striated by means of the elevated longitudinal veins; humeral area minutely punctured; costa slightly rounded for more than half the length from the base. Hind wings dark cinereous, testaceous along the costa, extending a little beyond the fore wings. Length of the body 8 lines (= 17 mm.); of the wings 20 lines (= 42 mm.).

The narrow prothorax distinguishes it from all the preceding species. It has most likeness to *E. sabulosa*, but the humeral trunk is not black.

Hab: Sarawak. From Mr. Wallace's collection.

Epilampra varia, Walker.

Epilampra varia, Walker. Cat. Blatt. B. M. Suppl. p. 130 (1869).
Heterolampra varia, Kirby. Syn. Cat. Orth. Vol. I, p. 121 (1904).
Epilampra varia, Shelford. T. E. S. 1906, p. 500, pl. XXX, fig. 9. Gen. Ins. fasc. 101, p. 15 (1910).

We substitute Shelford's description for the one given by Walker:

♀. Head flavo-testaceous, with a large black patch covering nearly the whole of the front from between the eyes to the labrum, vertex mottled with castaneous: antennæ broken; eyes pale. Pronotum not covering vertex of head, its posterior margin truncate, sides deflexed, smooth, shining, dark castaneous, all the margins flavo-testaceous, spotted with castaneous. Tegmina short, reaching only to the middle of the penultimate segment, coriaceous, smooth and shining, the venation obsolescent, the anal and axillary veins being entirely absent: serio-punctate, the punctures indicating the obsolescent venation: flavo-testaceous heavily marked with castaneous, the part of the right tegmen overlapped by the left castaneous, its surface reticulated. Wings equalling in length the tegmina, marginal area coriaceous. Supra-anal lamina not markedly bilobate, its posterior margin merely notched slightly; subgenital lamina ample: cerci short, flavid. Legs mottled with castaneous; front femora with three stout spines on anterior margin beneath, one on posterior margin; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$.

Total length 28·5 mm.; length of tegmina 20 mm.; pronotum 8·5 mm. × 11 mm.

Hab: Sarawak (Wallace).

Shelford adds:

This species, together with *E. imitans,* Br., [from Tenasserim] and an undescribed species from the Malay Peninsula, might constitute a new sub-genus, distinguished by the reduced wings and tegmina and the truncate or shortly produced posterior margin of the pronotum; they are smooth shining insects somewhat ovate in form.

Epilampra imitans, Brunner von Wattenwyl.

Epilampra imitans, Brunner. Ann. Mus. Genova, (2), Vol. XIII, p. 29, pl. I, fig. 10 (1893)..

Epilampra imitans, Shelford. Gen. Ins. fasc. 101, p. 14 (1910).

Tota picea, nitida. Caput atrum, nitidum. Pronotum latere indistincte rufo-fusco-ligatum, postice truncatum. Elytra nigra, nitida, segmentum abdominale quintum vix superantia, tota impresso-punctata, venis parum expressis. Alæ parte antica tota coriacea, nigra, venis distinctis, parte anali infumata. Femora rufo-fusca, apice cum tibiis and tarsis nigra. Metatarsus subtus serrulatus, pulvillo apicali instructus. Abdomen nigrum, rugulis longitudinalibus obsitum. Cerci nigri. Lamina supranalis ♀ leviter emarginata. ♀.

Long. corporis	♀	30 mm.
„ pronoti		7 mm.
lat. pronoti		11 mm.
long. elytrorum		17 mm.

Hab: Mount Moolevit, Tenasserim, 1000-1300 m. Carin-chebà.

Epilampra dytiscoides, n.sp. (Plate VII, fig. 35).

Closely allied to *E. varia,* Walker, from Sarawak, and *E. imitans*, Brunner, from Tenasserim. This is probably the "undescribed species from the Malay Peninsula" to which Shelford refers in his description of *E. varia*.

♂ and ♀. Vertex of head mottled castaneous and testaceous, with three distinct longitudinal light lines between the eyes. Eyes black. Front of head black, labrum yellow. Antennæ filiform, testaceous. Pronotum not covering vertex of head, smooth, shining, dark castaneous, with a broad testaceous margin in front and at the sides; posterior margin truncate. Tegmina short, not covering the last two abdominal segments, dark castaneous, smooth, shining, punctate, with a testaceous margin similar to that of the pronotum, which, however, becomes narrower and disappears posteriorly. Abdomen ventrally castaneous, dorsally mottled with testaceous.

length of body	♂	23-26 mm.	♀	27 mm.
width „ „		11-12 mm.		14 mm.
length of pronotum		6·5- 7 mm.		8 mm.
width „ „		9-10 mm.		11 mm.
length of tegmina		13·5-15 mm.		17 mm.

Hab: Bukit Kutu, Selangor, 3457′, where I obtained numbers of this species by beating the Honeysuckle bushes around the 'Old Bungalow,' April 1915.

This species has through the oval shape of its body, the almost black, smooth and shining tegmina and the yellow margin on pronotum and tegmina a striking resemblance to *Dytiscus marginalis*, and deserves the specific name *dytiscoides* much more than *Diploptera dytiscoides*.

Epilampra saravacensis, Shelford.

Epilampra saravacensis, Shelf. T. E. S., 1906, p. 268; Gen. Ins. fasc. 101, p. 15 (1910).

♀. Allied to *E. inclarata*, Wlk., but larger, the ocelliform spots on the tegmina smaller and less numerous, the part of the right tegmen overlapped by the left not marbled or ocellated, marginal field of wings not so strongly marked with rufescent.

Pale fulvous; head with darker points densely arranged; pronotum not covering the vertex of the head, its posterior margin obtusely angled, covered with densely arranged fuscous and rufous points, but not punctate. Tegmina with a few small white ocelliform spots, except on that part of the right tegmen overlapped by the left, which is uniform fulvous. Wings with apex slightly fulvous. Abdomen flavo-testaceous above, rufous below. Front femora with six stout spines on the middle of anterior margin beneath, three on posterior margin in distal half, mid-and hind-femora with three spines on anterior, four on posterior margin; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{0}$; genicular spines on mid-and hind-femora, none on the front pair; pulvilli margined with spines, the second joint with spines beneath in addition.

Total length 56 mm.; length of body 43 mm.; length of tegmina 48 mm.

Hab: Lingga, Batang Lupar River, Sarawak. One example.

Epilampra goliath, Shelford.

Epilampra goliath, Shelf. T. E. S. 1906, p. 269. Gen. Ins. fasc. 101, p. 15, pl. II, fig. 6 (1910).

♂. Allied to *E. moloch*, Rehn, from Siam,* of the same dark vinaceous brown above and of the same elongate ovate shape. It differs as follows: Head not projecting beyond the pronotum, vertex and a broad stripe extending to the clypeus fuscous, the front of the head and antennæ testaceous; pronotum with two crescentic impressions on the disc. Marginal field of tegmina very broad, almost equalling half the total breadth, mediastinal vein with five branches. Wings with anterior part suffused with rufous, strongest at apex. Subgenital lamina

* The exact locality is: Trang, Lower Siam, Malay Peninsula.

broad, asymmetrical with two flattened styles. Abdomen flavo-testaceous above, rufo-fuscous below with paler margins, a dark stigma on each side of each segment. Front femora with five spines on median part of anterior margin, three on posterior margin, mid-and hind-femora with three to five spines on each margin, all the femora with genicular spines, formula of apical spines $\frac{1}{1}$, $\frac{1}{1}$, $\frac{1}{0}$; pulvilli of posterior tarsi not margined with spines.

Total length 58 mm.; length of body 50 mm.; length of tegmina 50 mm.

Hab: Mt. Matang, Sarawak, 3000′. One example. N. Borneo, opposite Labuan. One example.

Epilampra flavomarginata, Shelford.

Epilampra flavomarginata, Shelf. T. E. S. 1906, p. 270. Gen. Ins. fasc. 101, p. 15 (1910).

♂ and ♀. Rufous. Head testaceous with minute rufous points, antennæ fuscous except at base. Pronotum not covering the vertex, sides deflexed, posterior margin obtusely angled, covered with small confluent dots darker than the ground-colour, except on the anterior and posterior margins which are flavo-testaceous, the rest rufous with fine yellow streaks on the veins, the right tegmen where covered by the left is infuscated; branching of mediastinal vein very obscure. Wings with the marginal field luteous, the apex and veins infuscated. Abdomen flavo-testaceous. Supra-anal lamina bilobate, strongly asymmetrical, in the female ample, semi-orbicular. Front femora with three to four spines on the proximal half of the anterior margin beneath, with close-set minute spines in the distal half, mid-and hind-femora with four to five spines on anterior margin, three on posterior margin, apical spines on both margins on all the femora, all the genicular spines present. Posterior metatarsus much longer than succeeding joints, second joint spinose beneath, pulvilli margined with spines.

Total length 21 mm.: length of body 17 mm.; length of tegmina 17 mm.

Hab: Kuching, Sarawak. Several examples.

Epilampra circumdata, n.sp. (Plate I, fig. 5).

Closely allied to *E. flavomarginata*, Shelford, from Sarawak, from which it differs chiefly through its much larger size.

Head testaceous. Pronotum not covering the vertex, posterior margin angled; chestnut, with a testaceous margin in front and at the sides. Tegmina exceeding the abdomen in length, testaceous, with fine chestnut spots which are largest and closest along the radial vein. Legs testaceous.

total length	♂ 28 mm.	♀ 33 mm.
length of pronotum	6 mm.	7 mm.
width of pronotum	7·5 mm.	9 mm.

length of tegmina	25 mm.	27·5 mm.
length of cerci	4 mm.	4 mm.
length of styles	1·5 mm.	—

Hab: Singapore and Malay Peninsula. The Raffles Museum has specimens from the Botanic Gardens, Singapore (July 1911); Bukit Timah, Singapore (July 1911); Maxwell's Hill, Perak (August 1908); and Bukit Kutu, Selangor (April 1915).

Epilampra inclarata, Walker.

Epilampra inclarata, Walk. Cat. Blatt. B. M., p. 198 (1868).
Heterolampra inclarata, Kirby. Syn. Cat. Orth. Vol. I, p. 121 (1904).
Epilampra inclarata, Shelford. T. E. S., 1906, p. 498; Gen. Ins. fasc. 101, p. 15 (1910).

Shelford's description of this species is as follows:

♀. Allied to *E. sararacensis*, Shelf. Testaceous; the ground-colour however obscured by a dense castaneous maculation and vermiculation. Pronotum not covering vertex of head, not punctate, posterior margin angulate, 9·5 mm. × 13 mm. Large ocelliform spots on the distal halves of the tegmina: mediastinal vein stout with three short branches and one slender ramose branch, costals few but highly ramose; surface of tegmina not punctate. Wings with marginal field semi-coriaceous and suffused with castaneous, apex not sinuate or angulate. Sub-genital lamina produced, trigonal. Front femora beneath with eight spines on anterior margin, two on posterior margin, no genicular spine; formula of apical spines $\frac{2}{1}, \frac{1}{1}, \frac{1}{1}$.

Hab: Sarawak (Wallace).

Epilampra lurida, Burmeister.

Epilampra lurida, Burm. Handb. Ent. II, p. 505 (1838).
Blatta cribricollis, Serville. Ins. Orth. p. 93 (1839).
Epilampra lurida, Brunner. Syst. Blatt. p. 185 (1865).
Heterolampra lurida, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).
Epilampra lurida, Rehn. Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 178 (1909).
Epilampra lurida, Shelford. Gen. Ins. fasc. 101, p. 14 (1910).

Pallida, pronoto punctis nigris impressis; elytris fulvo-reticulatis, stria punctorum nigrorum; humeris albo-maculatis; abdominis segmentis utrinque puncto nigro. Long. 1″ 2‴ (= 29·6 mm.). Java.

We add Brunner's description:

Fulva. Pronoto punctis fuscis, confertis, impressis. Elytris maculis dissolutis, ferrugineis, punctis nigris paucis, aequidistantibus, venæ scapulari appositis, vittâ humerali elevatâ albâ, nigro-maculata.

Long.		
corporis	♂ 25 mm.	♀ 32 mm.
pronoti	6 mm.	8 mm.

pronoti transv.	9 mm.	11 mm.
elytrorum	28 mm.	35 mm.
femorum post.	7 mm.	9 mm.
tibiarum post.	9 mm.	12 mm.
tars. post.	5·5 mm.	7 mm.

Hab: Borneo, Java, Celebes, India (Shelford, Gen. Ins.); Sumatra (Rehn).

Epilampra ridleyi, Kirby.

Heterolampra ridleyi, Kirby. A. M. N. H. (7), Vol. XII, p. 278 (1903).

Epilampra ridleyi, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

♀. Head brownish chestnut above, passing into yellowish tawny below; antennal pits slightly bordered with brown in front; pronotum leaving the head only slightly free, elliptical, much broader than long, the lateral angles only slightly rounded, reddish brown, rather darker in the middle, but not towards the extremity, with numerous shallow black punctures, and a few rather large black dots, chiefly towards the hinder extremity; front with slight transverse ridges in the middle; meso-and metanotum yellowish brown (perhaps discoloured), abdomen very broad, orange tawny, with a slight central carina. and slight raised concolorous carinæ at the extremities of the segments; terminal laminæ very long, brown, except at the base. Tegmina light grey, with numerous pale spots and spaces, largest and most numerous towards the tips; costa arched, covered part of right tegmen yellowish brown beyond the pale yellowish oblique line. Wings smoky brown along the costa, this colour extending towards the tip as far as the fold; between this and the base is a long, narrow, triangular, yellowish space; apex and the whole of the wings below the fold subhyaline. Under surface of body reddish brown, shading into black towards the extremity of the abdomen; pleura and front coxæ slightly pruinose-grey; legs blackish above, reddish brown below.

Total length 47 mm.; expanse of wings 116 mm.

Hab: Singapore.

Epilampra deflexa, Saussure.

Epilampra deflexa, Sauss. Mém. Soc. Genève, Vol. XXIII, p. 126, pl. X, fig. 43 (1873).

Heterolampra deflexa, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).

Epilampra deflexa, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

Crassiuscula, ferruginea; capite fusco, ore orbitisque flavis; pronoto fusco-punctulato, lateribus deflexis; elytris abdomen paulo superantibus, fusco-ferrugineo tessellatis, subocellatis; alis fulvo-afflatis; abdomine subtus carinulato-granulato; lamina supraanali vix prominula, rotundata, fissa. ♀.

Longueur	du corps	25·6 mm.
,,	d'elytre	15·5 mm.
,,	du pronotum	5·4 mm.
Largeur	du pronotum	6·5 mm.

♀. Assez petite, de forme trapue. Couleur d'un brun-fauve ferrugineux. Tête peu découverte, bombée, noirâtre, devenant variée de fauve au vertex, avec les orbites, une ligne se prolongeant sur les ocelles et une ligne courte au front, d'un jaune roussâtre. Bouche et moitié inférieure du chaperon, jaunes. Base des antennes d'un brun testacé.

Pronotum assez triangulaire, les bords lateraux étant rabbatus: le bord postérieur en angle obtus; le disque sans dépressions distinctes. Tout la surface d'un jaune d'ambre densement pointillée de brun-roux, les bords ourlés, mais non marquetés de brun.

Elytres dépassant un peu l'abdomen, ovalaires, à bord antérieur arque, d'un fauve ferrugineux, tachetés et subocelliés de brun-ferrugineux; la veine médiastène saillante en dessous et divisée au bout en 3 ou 4 branches; le champ anal piriforme, terminé un peu avant le milieu du bord sutural. Ailes lavées du fauve, avec le bord antérieur brun-ferrugineux, opaque.

Pattes brunes-ferrugineuses: un peu bordées de brun; les tibias noircis au bout et avec des taches noires à l'insertion des épines.

Abdomen large, ovalaire, à bords peu serrulés; brunâtre en dessus, avec le bord des segments pâle: de le couleur du pronotum en dessous, moucheté de noir, et avec des petits tubercules carinulaires sur les côtés; dernier segment ventral un peu sinué, portant une petite échanerure médiane: plaque suranale grande, coriacée, arrondie, echancrée au milieu, à peine débordante.

Hab: Java.

Espèce voisine de l' *E. inconspicua*, Br., ayant le pronotum assez triangulaire par suite de l'abaissement de ses bords lateraux, comme chez l'espèce citée et chez les *E. mexicana* et *crassa*, Sauss.

Epilampra geminata, Brunner von Wattenwyl.

Epilampra geminata, Brunner. Abh. Senekenb. Ges. Vol. XXIV, p. 208 (1898).

Heterolampra geminata, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).

Epilampra geminata, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

Fusco testacea, ♂ fuscior. Vertex liber, unicolor castaneus. Frons pallida. Pronotum læve, punctis fuscis minoribus confertis, majoribus rarioribus conspersum. Elytra apice emarginato-truncata, fusco-testacea, in ♂ castanea, parte obtecta elytri dextri valde obscuriore, in basi ipsa ad insertionem macula nigra signata. Abdomen superne castaneum, pallide marginatum, subtus testaceum. ♂ ♀.

	♂	♀
long. corp.	25 mm.	32 mm.
„ pron.	6·5 mm.	8 mm.
lat. „	9 mm.	10 mm.
long. elytr.	31 mm.	38 mm.

Hab: Kina Balu and Brunei (Borneo).

Epilampra albina, *Saussure.*

Hedaia albina, Sauss. Rev. Suisse Zool. Vol. III, p. 351 (1895).
Hedaia albina, Kirby. Syn. Cat. Orth. Vol. I, p. 123 (1904).
Epilampra albina, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

♀. Pallidissima, *Epilampra lurida* haud dissimilis, at paulo crassior; canescens, levissime fulvescens. Frons fusco 4-maculata; vertex sparse nigro-punctulatus. Oculi quam ocelli magis remoti, in vertice retro-divergentes. Antennæ ferrugineæ, primo articulo luteo. Pronotum mediocre, processu brevi, marginibus lateralibus obsoletis, retro valde convergentibus; superficie subtiliter lineolato-coriacea, ubique punctis minutis nigris remotis conspersa; his lineato-impressis; margine postico haud maculato. Elytra quam in *Epilampra lurida* minus longa, sub-pellucida, apice oblique rotundato-truncata, maculis et punctis minimis brunneis tessellata punctisque minutis fuscis raris conspersa. Vena mediastina subtus breviter ramosa, Alæ vitreæ, venis pallidis, apice margine antico leviter griseo-punctulato. Pedes concolores. Femora anteriora subtus margine antico spinis 6-7; spini apicali prima minima.* Abdomen supra piceo-fuscescens, marginibus anguste luteis. Lamina supraanalis ♂ ♀ prominula, incisa, late bilobata, membranacea. Cerci quam illa longiores, superne linea media et apice fuscis. Ultimum segmentum ventrale apice leviter truncatum.

♂. Minor. Oculi quam ocelli paulo propiores, superne tumidi, in vertice valde retro-divergentes. Lamina infragenitalis transversa, margine postico parum arcuato, utrinque ad stylos inciso; styli laterales in incisuris marginis postici exserti.—Var. Color fulvescens.

	♂	♀
Long.	26 mm.	32 mm.
pron.	6·8 mm.	8 mm.
latit. pron.	8·8 mm.	11 mm.
elytr.	29 mm.	43 mm.

Hab: Java.

Espèce facile à distinguer à l'oeil, à sa couleur très pâle, blanchâtre, avec des élytres transparents, seulement tesselés de très-petites salissures brunes-roussâtres, et des ailes hyalines. Paraît ressembler en plus grand à l' *E. inconspicua*, Br. des Iles Philippines (que nous ne connaissons pas), au moins par ses ailes hyalines; du reste distincte par le points noirs dont le pronotum est regulièrement parsemé; points occupant de petites impressions, par places brièvement linéaires.

* **Caractère du genre *Poeciloderrhis*, Stal.**

Epilampra laevicollis, Saussure.

Epilampra laevicollis, Sauss. Mém. Soc. Genève, Vol. XXIII, p. 129, pl. X, fig. 45 (1874).

Epilampra laevicollis, Krauss. Semon Forsch. Austr. Mal. Arch. Vol. V, p. 750 (1903).

Heterolampra laevicollis, Kirby. Syn. Cat. Orth. Vol. I, p. 122 (1904).

Epilampra laevicollis, Shelford. Gen. Ins. fasc. 101, p. 15 (1910).

Fusco-testacea, capite parum prominulo, fusco, ore testaceo; pronoto elytrisque fulvo-ferrugineis, fusco-ferrugineo punctulatis; illo elliptico, corneo, punctis 2 disci impressis, marginibus parum deflexis, postico angulatim producto; his abdomine longioribus; abdomine postice fuscescente. ♀.

longueur du corps	♂ 22	mm.
„ de l'elytre	18·5	mm.
„ du pronotum	6·1	mm.
largeur du pronotum	7·4	mm.

♀. D'un brun testacé. Tête peu saillante, brune avec la bouche, les taches ocellaires et le tour des yeux au sommet, testacés.

Pronotum assez arrondi, lisse et corné, sans sillons: les bords latéraux arqués, peu rabbatus, largement ourlés: le bord postérieur assez fortement prolongé en pointe arrondie. La couleur du pronotum d'un fauve d'ambre, densément pointillé de brun: le disque n'offrant qu'un dessin très-obsolète ou nul, marqué en avant du milieu de deux petite impressions.

Elytres étroits, dépassant l'abdomen; à bord antérieur un peu arqué; de la couleur du pronotum, tout semés de petites taches brunes-ferrugineuses et ornés sur la nervure principale de quelques petites taches subocellaires; la veine médiastine non apparente en dessus, très-saillante en dessous, émettant seulement deux petites branches apicales; le champ anal piriforme, atteignant aux 2/5 du bord sutural; la partie recouverte de l'élytre droit brunie. Ailes lavées de ferrugineux.

Pattes fauves-testacées; hanches nuancées de gris.

Abdomen d'un brun testacé, devenant brun en arrière. Dernier segment ventral grand, à bord postérieur arque, non échancré.

Cette espèce vient se placer au voisinage de l' *E. cinerascens*, Br.

Hab: Java (Saussure): Tjibodas, Java (Krauss).

Epilampra trongana, Rehn.

Epilampra trongana, Rehn. Proc. U. S. Nat. Mus., Vol. XXVII, p. 548 (1904).

Epilampra trongana, Shelford. Gen. Ins. fasc. 101, p. 14 (1910).

Types ♂ and ♀. Allied to *E. lineaticollis*, Bolivar, from Trichinopoly, and *E. geminata*, Brunner, from Kina Balu, Borneo. From the former it differs in the very different coloration and from the latter in the non-emarginate apex of the

tegmina. The description of the latter is so unsatisfactory that little can be made out of it. The common East Indian species *E. nebulosa,* Burmeister, differs in the form of the pronotum, the elongate anal field of the tegmina, the more acuminate apex of the tegmina, and the broader subgenital and more rounded supraanal plates of the male.

♂. Size medium; form elongate-ovate. Head projecting considerably beyond the pronotum, the anterior margin subtruncate; interspace between the eyes and that between the ocelli equal; ocelli large, touching the eyes; eyes irregularly reniform, the greatest depth anteriorly; antennæ not equaling the body in length. Pronotum heptagonal; anterior margin truncate; posterior margin obtuse angulate; postero-lateral margins shorter than any of the others; all angles blunt and rounded; lateral portions of the pronotum depressed. Tegmina elongate, considerably exceeding the apex of the abdomen; costal margin gently arcuate, sutural margin straight, apex very obtusely rounded; basal field equal to one-third the length of the tegmina; costal veins numerous and sublongitudinal in character; ulnar vein with seven distinct rami; anal suleus very slightly arcuate, anal field reaching two-fifths the way to the apex of the tegmen. Supra-anal plate produced, bilobate, the centrally fissure quite deep. Cerci broken. Sub-genital plate produced, subtruncate. Anterior femora with five large median, one apical, and an intermediate series of minute spines on the anterior margin, posterior margin with five medium-sized spines, no genicular spine present; tibiæ about three-fourths the length of the femora; tarsi exceeding the tibiæ and not equaling the femora in length. Median femora with four evenly distributed spines on the median and distal portions of the anterior margin, posterior margin with four spines, none of which are apical, genicular spine rather short; tibiæ equal to the femora in length; tarsi considerably shorter than the femora, metatarsi almost equal to the remaining tarsal joints. Posterior femora with four spines on each margin, genicular spine of moderate size; tibiæ one and one-fourth the length of the femora; tarsi three-fifths the length of the tibiæ, metatarsi equal to the remaining joints in length, the two lateral and two ventral angles supplied with rows of moderate-sized teeth, pulvilli rotundate, apical, arolia triangular and of rather large size.

♀. Size rather large. Head with the interspace between the eyes almost twice that between the ocelli; ocelli not touching the eyes; antennæ equal to about three-fifths the length of the body. Pronotum similar to the male, except that the anterior and antero-lateral margins form a continuous arc. Wings equal to the tegmina in length when in repose; costal margin strongly arcuate apically, apex subangulate; ulnar vein bearing about sixteen complete rami and a number of in-

complete ramifications. Supra-anal plate produced, bilobate, the fissure-shaped. Cerci elongate fusiform, depressed, apex acuminate, not equaling the supra-anal plate in length. Subgenital plate very large, rotundate; apex with a very shallow, hardly perceptible emargination; the broad, shallow cereal emargination bordered externally by a sharp dentiform process.

General colour ashy-gray brown, clouded more or less distinctly with wood brown. Head with the interorbital and the interocellar regions dark wood brown in the male, unmarked in the female: eyes and antennæ dark wood brown. Pronotum without a distinct pattern, but closely and finely punctate with the darker tint; in the male the posterior margin bears several short transversely distributed longitudinal streaks of dark brown. Tegmina with the peculiar markings characteristic of the paler species of the genus; base of the discoidal vein and the entire anal sulcus brokenly marked with black. Wings with the median costal margin suffused with orange yellow, the apex with wood brown.

length of body	♂ 29·2 mm.	♀ 33 mm.
length of pronotum	6·5 mm.	8.5 mm.
greatest width of pronotum	8 mm.	10·2 mm.
length of tegmina	29·7 mm.	35·5 mm.
greatest width of tegmina	8·5 mm.	9·5 mm.

Hab: Malay Peninsula (Trang, Lower Siam). (Dr. W. L. Abbott; Cat. No. 6948, U. S. Nat. Mus.).

Epilampra moloch, Rehn.

Epilampra moloch, Rehn. Proc. U. S. Nat. Mus., Vol. XXVII, p. 550 (1904).

Epilampra moloch, Shelford. Gen. Ins. fasc. 101, p. 14 (1910).

Type ♀. This magnificent and striking form does not appear to be closely allied to any of the previously described species of the genus. In general superficial appearance it resembles *E. badia* very closely, but it is readily differentiated by the form of the supra-anal plate and the proportions of the posterior tarsal joints.

Size large; form elongate ovate. Head projecting somewhat beyond the pronotum, anterior margin very slightly arcuate; interspace between the eyes almost twice as wide as that between the ocelli; ocelli of medium size, not touching the eye; eyes elongate, strongly compressed in the median and posterior portions; antennæ almost equaling the body in length. Pronotum subheptagonal in outline: anterior and antero-lateral margins arcuate; posterior margins obtuse angulate, postero-lateral margins very short; all the angles very broadly rounded except the posterior and the lateral pair which are blunt; lateral portions considerably depressed. Tegmina elongate, considerably exceeding the tip of the abdomen; costal margin broadly arcuate, apex damaged; basal field rather

elongate, almost equaling the anal field in length, subcoriaceous; anal sulcus rather evenly arcuate. Supra-anal plate strongly produced, bilobate, apex of the lobes much nearer the internal than the external margin, fissure between the lobes V-shaped and moderately deep. Cerci elongate, narrow, subequal, apically acuminate, slightly depressed. Subgenital plate broad; median portion subtruncate, with two slight rounded lobes centrally, cereal emarginations slight. Anterior femora with three to five spines on the anterior margin, two of which are apical, the others median, posterior margin with four or five spines, one of which is apical, no geniculer spine; tibiæ two-thirds the length of the femora; tarsal joints almost equal to the femora in length, metatarsi not more than three-fifths the length of the terminal joint. Median femora bearing three or four spines on the median and distal sections of the anterior margin, posterior margin with five spines, the apical one small, geniculer spine short; tibiæ equal to the femora in length; tarsi equal to the tibiæ or femora in length, metatarsi slightly longer than the terminal joint. Posterior femora with four subequal spines on the anterior margin, posterior margin with four spines, none of which are apical, geniculer spine about equal to the other femoral spines in size; tibiæ one and two-thirds the length of the femora; tarsi equal to the femora in length, metatarsi exceeding the remaining joints in length, lower surface bearing two longitudinal, subcontiguous rows of minute teeth; pulvilli triangular and apical; arolia triangular and of medium size.

General colour, dark vinaceous. Head and under surface, dull ochraceous brown; tibiæ and tarsi of the posterior limbs of the general tint, the larger spines with a pale median annulus. Eyes dull umber; antennæ pale red-brown. Pronotum minutely punctate with blackish brown, also with a few clouded irregular blotches of red-brown along the posterior margins.

length of body	49·6 mm.
length of pronotum	11·1 mm.
greatest width of pronotum	15·5 mm.
length of tegmina	46 + mm.
greatest width of tegmina	14·9 mm.

Hab: Malay Peninsula (Trang, Lower Siam). (Dr. W. L. Abbott; Cat. No. 6949 U. S. Nat. Mus.).

Genus ***RHICNODA***, Brunner von Wattenwyl.

Brunner, Ann. Mus. Genova, (2) Vol. XIII, p. 30 (1893).
Shelford, Gen. Ins. fasc. 101, p. 9 (1910).

Form depressed. Pronotum anteriorly parabolic, covering vertex of head, in ♂ posteriorly produced, in ♀ truncate. Tegmina and wings fully developed in ♂, tegmina reduced to squamiform lobes or absent and wings absent in ♀. Abdomen

(♀) with a pair of spiracular tubes projecting on either side from beneath the seventh tergite. Femora moderately spined. Tarsi long, posterior metatarsi biseriately spined beneath, longer than the succeeding joints, pulvilli apical, remaining joints with spines surrounding their pulvilli.

Rhicnoda rugosa, Brunner von Wattenwyl (Plate III, fig. 18).

Rhicnoda rugosa, Brunner. Ann. Mus. Genova (2), Vol. XIII, p. 31, pl. I, figs. 11 a, b. (1893).
Rhicnoda rugosa, Krauss. Semon Zool. Forsch. Austr. Mal. Arch. Vol. V, pp. 747-8 (1903).
Rhicnoda rugosa, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904).
Rhicnoda rugosa, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 552 (1904); Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).
Rhicnoda rugosa, Shelford. Gen. Ins. fasc. 101, p. 9 (1910).

♀. Colore fusco-testaceo. Pronotum planum. Segmenta dorsalia omnia rugulis obtusis obsita. Elytra lateralia, lobiformia, acuminata, mesonotum parum superantia. Pedes compressi.

♂ (?) minor, colore fusco. Pronotum postice obtuse triangulariter productum. Elytra perfecte explicata, fusco-testacea et fusco-punctulata. Alæ fuscæ, punctulatæ. Pedes testacei. Abdomen fuscum. Cerci testacei. Lamina supra-analis pallida, emarginata, lobis rotundatis.

long. corporis	♂ (?) 20 mm.	♀ 31 mm.
„ pronoti	6·5 mm.	8 mm.
lat. pronoti	9 mm.	14 mm.
long. elytrorum	22 mm.	5 mm.

Loc.: Java; Tenasserim; Pegu (Brunner); Java (Krauss); Sumatra (Rehn); Borneo, Halmahera (Shelford). The Raffles Museum possesses specimens from Singapore, Mt. Ophir (Johore); Bukit Kutu (Selangor); Gunong Kledang (Perak); Langkawi Island and Sarawak.

Rhicnoda natatrix, Shelford.

Rhicnoda natatrix, Shelf. Zoologist, 1907, p. 226; Gen. Ins. fasc. 101, p. 9, pl. II, fig. 1 (1910).

♀. Castaneous. Allied to *R. rugosa*, Br., from Burma and Java, but larger, and with the dorsal segments less rugose. Head concavely depressed between the antennal sockets, this area cribrately punctate, rest of head with scattered punctures. Pronotum truncate, anterior and lateral margins slightly reflected; a few scattered punctures and a pair of impressions on the disc. Tegmina rufous, exceeding the mesonotum in length. Meso-and metanotum and abdominal tergites slightly and irregularly rugose, the posterior margins of the 6th and 7th tergites plicated. Supra-anal lamina produced, apex emarginate, cerci abbreviated, spiracular tubes short; sub-genital lamina ample, posterior margin sinuate, disc transversely wrinkled. Front with five spines in middle of anterior margin beneath,

four spines on posterior margin: formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$, front femora with no geniculer spine. Posterior metatarsus equals remaining joints. Total length, 35·5 mm.; length of tegmina ? mm.; pronotum, 10 mm. × 17·5 mm.

Hab: Borneo (Wilson Saunders collection, Hope Museum, Oxford).

Rhicnoda spinulosa, Brunner von Wattenwyl.

Rhicnoda spinulosa, Brunner. Ann. Mus. Genova (2), Vol. XIII, p. 31 (1893).
Rhicnoda spinulosa, Kirby. Syn. Cat. Orth. Vol. I, p. 124 (1904).
Rhicnoda spinulosa, Shelford. Gen. Ins. fasc. 101, p. 9 (1910).

Colore griseo-testaceo. Pronotum marginibus sub-reflexis. Elytra nulla? Segmenta dorsalia omnia rugulis spiniformibus obsita. An larva?

long. corporis	♂	(larva?)	18 mm.
„ pronoti			6·5 mm.
lat. pronoti			10 mm.

Hab: Java.

Rhicnoda desidiosa, Rehn.

Rhicnoda desidiosa, Rehn. Proc. U. S. Nat. Mus., Vol. XXVII (1904), p. 552.
Rhicnoda desidiosa, Shelford. Gen. Ins. fasc. 101 (1910), p. 9.

Type ♀ (immature). Apparently closely allied to *R. reflexa,* Saussure and Zehntner, from Nicaragua, from which it differs in the broader pronotum, in the larger size, and the broader supraanal plate. No relationship exists with either of the Old World species (*rugosa* and *spinulosa,* Brunner), or with *R. laminata,* Brunner, from St. Vincent.

Size rather large; form ovate, depressed; surface rugose. Head completely hidden under the pronotum, anterior border subtruncate; interspace between the eyes slightly less than that between the ocelli; ocelli rather small, touching the eyes, eyes elongate, median and posterior sections strongly depressed; antennæ short, not equal to half the length of the body: lower surface of the head deplanate, the inter-antennal region concave. Pronotum transverse, subtriangular, apex anteriorly; lateral margins uncurved, meeting at an angle anteriorly; posterior margin very broadly obtuse angulate, lateral angles very narrowly rounded, the posterior margin supplied with a transverse series of nodes or folds; disk and cephalic boss of the pronotum well elevated above the comparatively flat lateral portions. Mesonotum and metanotum with their posterior margins emarginate, in the metanotum with a slight median projection, each supplied on the median portion of the posterior margin with a transverse series of eight to ten longitudinal folds. Abdomen with the lateral portions of each segment produced posteriorly, but not into a sharp dentiform process; posterior margin of each segment bearing a transverse series of

longitudinally placed folds. Supra-anal plate produced, triangular, the apex with a wide triangular emargination. Cerci short, strongly depressed, apex blunt. Subgenital plate large, transverse, the median portion subtruncate, the apical region very broadly arcuate, cercal emargination slight. Anterior femora with the anterior margin bearing four or five large median, one or two large apical, and an intermediate series of very short, minute spines, posterior margin with five spines, no genicular spine present; tibiæ about half the length of the femora; tarsi equal to the tibiæ in length. Median femora bearing four or five spines on the anterior margin, one of which is apical and the others median, posterior margin with six spines, two of which are subapical, genicular spine short; tibiæ about three-fourths the length of the femora; tarsi not equaling the tibiæ in length. Posterior femora with four spines on the distal half of the anterior margin, posterior margin with three median spines, genicular spine very short and stout; tibiæ one and one-fourth the length of the femora; tarsi about half the length of the femora, metatarsi slightly shorter than the other joints combined, pulvilli of the metatarsi extending to the base of the joint as a narrow line, flanked by a row of minute teeth; arolia of rather large size.

General colour, wood brown, on the thoracic segments obscurely punctate with darker brown. Cephalic boss and disk of the pronotum and the median portions of the meso— and metanotum reddish brown. Posterior margins of the thoracic and abdominal segments edged with dark brown. Eyes blackish brown, mottled with paler brown. Antennæ gray brown, except the basal joint, which is umber.

length of body	26·5 mm.
length of pronotum	8·5 mm.
greatest width of pronotum	14·4 mm.
greatest width of mesonotum	17·5 mm.
greatest width of abdomen	15.0 mm.

Hab: Malay Peninsula (Trang, Lower Siam). (Dr. W. L. Abbott; Cat. No. 6950, U. S. Nat. Mus.).

Genus ***CALOLAMPRA***, Saussure.

Saussure, Soc. Ent. Zurich, Vol. VIII (1893), p. 57; Rev. Suisse Zool., Vol. III (1895) p. 344.
Shelford, Gen. Ins. fasc. 101, p. 10 (1910).

Vertex of head in ♂ freely exposed, in ♀ sometimes covered. Pronotum: ♂ posteriorly produced obtusely, ♀ truncate. Tegmina: ♂ long, considerably exceeding the apex of the abdomen, ♀ lobiform. Wings: ♂ as long as the tegmina, ♀ absent. Abdomen in ♀ very broad. Femora rather sparsely armed beneath. Tarsi long, posterior metatarsi longer than the succeeding joints spined beneath, second joint not spined, with large pulvillus, or with spines round the pulvillus, or with spines beneath and apical pulvillus.

Calolampra pedisequa, Rehn.

Calolampra pedisequa, Rehn. Proc. U. S. Nat. Mus., Vol. XXVII, p. 547 (1904).

Calolampra pedisequa, Shelford. Gen. Ins. fasc. 101, p. 10 (1910).

Type ♂. Allied to *C. aspera,* Tepper, from Australia, but differing in the coloration and the differently shaped pronotum. Nothing further can be determined from Tepper's description.

Size medium; form depressed, ovate; surface rugulose. Head slightly projecting beyond the pronotum; interspace between the eyes half again as wide as that between the ocelli; lower surface of head deplanate; eyes subpyriform, the posterior portion strongly compressed; antennæ not equal to half the length of the body, third joint slightly exceeding the basal one in length. Pronotum hemispherical in outline; anterior and lateral margins arcuate; posterior margin subtruncate, slightly produced centrally; postero-lateral angles very narrowly rounded. Mesonotum and metanotum with the posterior margins concave, the latter being slightly produced in the middle, these margins bearing a transverse series of longitudinally disposed folds or scars. Abdomen with the postero-lateral angles of the segments not produced; each segment bearing a series of "scars" similar to those on the mesonotum and metanotum, though somewhat larger in a size and more distinct in character; ventral surface with evenly distributed pustules. Supra-anal plate transverse, the apex broadly and shallowly emarginate. Cerci short, stout, conical, not equaling the supra-anal plate in length. Subgenital plate strongly transverse, narrow, with a moderately deep V-shaped emargination; styles minute and lateral. Anterior femora with the anterior border bearing three or four submedian and one apical spine, between which groups are ranged a series of minute, comb-like spines, posterior margin with five rather even and regularly distributed spines, no genicular spine present; tibiæ not quite two-thirds the length of the femora: tarsal joints about equal to the tibiæ in length. Median femora with four rather short and stout spines on the anterior margin, posterior margin with five spines, no genicular spine present; tibiæ almost equaling the femora in length; tarsi slightly shorter than the tibiæ; metatarsi very distinctly longer than the terminal joint. Posterior femora with four well-spaced, blunt median and one apical spine on the anterior margin; posterior margin with four spines, basal one very small, none apical, genicular spine rather short, but quite distinct; tibiæ exceeding the femora by about one-third the length of the latter; metatarsi about equal to the other tarsal joints in length, external face of the metatarsi bearing a longitudinal row of fine teeth, inferior face bearing two parallel, closely placed rows of the same, pulvilli triangular and apical, arolia minute,

General colour wood brown. Head with superior surface and the interocular interspace pale ochraceous, finely punctate with brown; ocelli pale ochraceous; lower surface, eyes, and antennæ blackish brown. Abdomen with the "scars" slightly darker in colour than the surrounding tint. Femora darker in colour than the other portions of the limbs; trochanters very pale wood brown.

length of body	23 mm.
length of pronotum	6 mm.
width of pronotum	10·5 mm.
greatest width of abdomen	12·7 mm.

Hab: Malay Peninsula (Trang, Lower Siam). (Dr. W. L. Abbott; Cat. No. 6947, U. S. Nat. Mus.).

Sub-family 5. BLATTINAE (= Periplanetinae).

Shelford, Gen. Ins. fasc. 109, p. 1 (1910).

Antennæ setaceous and usually much longer than the body, very rarely plumose or incrassated. Head with the vertex usually exposed. Eyes reniform. Ocelliform spots rarely absent. Tegmina and wings completely developed, reduced, rudimentary or absent; when present usually semicoriaceous; the costal veins of the wings irregular and much branched, ulnar vein of the wings multiramose, the branches irregular and bifurcated. Sub-genital lamina of male typically quadrate and symmetrical with a pair of slender genital styles. Sub-genital lamina of female modified to form a pair of apposed valves. Cerci variable, but generally flattened and acuminate. Femora generally strongly spined beneath. Tarsi variable. Ootheca chitinous, carried with the suture uppermost. None of the species viviparous.

Key to the Malayan Genera of the Blattinæ.

Adapted from Shelford, Gen. Ins. fasc. 109, p. 2.

1. Tibiae with spines on outer aspect triseriately arranged.
   2. Posterior metatarsus shorter or not longer than the remaining joints which are unarmed beneath.
      3. Wings absent or rudimentary. Tegmina rudimentary or absent.
         4. Posterior metatarsus short, not spined beneath, or with only a few spines, its pulvillus usually large, and occupying at least half of the joint. Genus *Platyzosteria*, Brunner.
         4¹. Posterior metatarsus longer, spined beneath, its pulvillus not occupying one-half of the joint. Genus *Cutilia*, Stal.
      3¹. Tegmina and wings well developed.
         4. Antennae not plumose nor incrassated. Genus *Methana, Stal.*
         4¹. Antennae plumose and incrassated. Genus *Thyrsocera*, Burmeister.
   2¹. Posterior metatarsus longer than the remaining joints, the 2nd and generally the 3rd of which are armed beneath.
      3. Pronotum trapezoidal or discoidal.
         4. Both sexes apterous or with squamiform tegmina. Genus *Stylopyga*, Fisch. v. Waldh.

4¹. Male sex only or both sexes with well-developed tegmina.

5. Second joint of posterior tarsi long, together with the 3rd and 4th joints biseriately spined beneath. Pulvilli minute.

6. Tegmina of ♂ variable, but always shorter than the abdomen; of ♀ squamiform or truncate or lanceolate. Genus *Blatta*, Linné.

6¹. Tegmina of ♀ fully developed, exceeding the apex of the abdomen.

7. Pronotum broadest behind middle, its sides deflexed. Genus *Periplaneta*, Burmeister

7¹. Pronotum broadest before middle, discoidal. Genus *Homalosilpha*, Stal.

5¹. Second joint of posterior tarsi short, 4th joint unarmed beneath. Pulvilli moderately large. Genus *Dorylaea*, Stal.

3¹. Pronotum oblong. Genus *Eroblatta*, Shelford.

1¹. Tibiae with spines on outer aspect biseriately arranged.

2. Tibial spines well—or moderately well—developed. Genus *Miroblatta*, Shelford.

2¹. Tibial spines weak and sparse.

3. Pronotum very rugose, discoidal (♂) or trapezoidal (♀). Genus *Catara*, Walker.

3¹. Pronotum not very rugose, oblong. Genus *Archiblatta*, Vollenhoven.

Genus ***PLATYZOSTERIA***, Brunner von Wattenwyl.

Brunner, Système des Blattaires, p. 204 (1865).
Shelford, Gen. Ins. fasc. 109, p. 5 (1910).

Ocelli absent. Antennæ shorter than the body. Body depressed. Vertex of head not covered by pronotum. Pronotum not cucullate, its margins not reflected. Rudiments of tegmina present as squamiform lobes or absent. Wings absent. Posterior angles of all the abdominal tergites produced, those of the distal tergites strongly produced and spiniform. Supra-anal lamina variable in shape, but never sub-bilobate in ♀. Genital styles long, slender, acuminate. Cerci frequently exceeding the supra-anal lamina, apex acuminate. Tibiæ moderately spined, spines on outer aspect triseriately arranged. Posterior metatarsus very short, not spined beneath or with only a few spines, its pulvillus covering the greater part of the joint beneath.

Platyzosteria soror, Brunner von Wattenwyl (Plate V, fig. 29).

Polyzosteria soror, Brunner. Syst. Blatt., p. 219 (1865).
?*Platyzosteria semicincta*, Walker. Cat. Blatt. B. M., p. 140 (1868).
Polyzosteria soror, Saussure. Mém. Soc Genève, Vol. XX, p. 107 (1869).
Cutilia soror, Kirby. Syn. Cat. Orth. Vol. I, p. 134 (1904).
Platyzosteria soror, Shelford. Gen. Ins. fasc. 109, p. 7 (1910).

Fusco-castanea, lata; latere flavo-marginata. Elytris lobiformibus, acuminatis. Laminâ supra-anali maris productâ,

emarginatâ. Laminâ subgenitali transversâ, margine recto, angulis dentatis. ♂.

long.	♂
corporis	17·5 mm.
pronoti	6 mm.
pron. transv.	9·5 mm.
fem. post.	6 mm.
tib. post.	7·5 mm.
tars. post.	4·5 mm.

Hab: Amboina (Brunner).—Borneo, Formosa, Austro-Malayan, Melanesian and Polynesian Islands (Shelford).—Banting, Sarawak (Rev. G. Dexter Allen).—The specimen figured is from Changi, Singapore, Aug. 1896 (Raffles Museum).

Genus ***CUTILIA***, Stål.

Stal. Oefv. Vet.—Akad. Forh. Vol. XXXIV, no. 10, p. 36 (1877).
Shelford. Gen. Ins. fasc. 109, p. 7 (1910).

Closely allied to *Platyzosteria*, Brunner von Wattenwyl, but the posterior metatarsus long and biseriately spined beneath, its pulvillus apical; remaining tarsal joints unarmed beneath, their pulvilli occupying the entire joints. Tegminal rudiments present. In all but one species the posterior angles of the distal abdominal tergites strongly produced backwards. Supra-anal lamina (♂) quadrate.

Cutilia nitida, Brunner von Wattenwyl.

?*Blatta aterrima*, Eschscholtz. Entomographien, p. 89 (1822).
Platyzosteria nitida, Brunner. Syst. Blatt., p. 214 (1865).
Periplaneta polita, Walker. Cat. Blatt. B. M., p. 139 (1868).
Cutilia tartarea, Stal. Oefv. Vet.—Akad. Forh. Vol. XXXIV, no. 10, p. 36 (1877).
Melanozosteria nitida, Kirby. Syn. Cat. Orth. Vol. I, p. 129 (1904).
Cutilia nitida, Shelford. Gen. Ins. fasc. 109, p. 8 (1910).

Brunner's description is as follows:

Aterrima, nitida. Corpore ovato, convexo. Elytris lobiformibus, rhomboideis. Laminâ supra-anali maris acutangulâ, feminæ valde emarginatâ, lobis integerrimis, acutissimis. Cerci illâ longioribus, mucronatis. ♂ ♀.

Long.	♂	♀
corporis	21 mm.	24-32 mm.
pronoti	7 mm.	7·8-9 mm.
pron. transv.	11·5 mm.	12-16 mm.
fem. post.	7 mm.	9-11 mm.
tib. post.	8·5 mm.	10-12·5 mm.
tars. post.	5·5 mm.	6-7 mm.

Hab: Amboina (Brunner).—Formosa, Malay Archipelago, N. S. Wales (Shelford). The Raffles Museum has a fine series of this species collected by Mr. V. Knight on Pulo Tioman (East Coast of Johore), June 1915.

Genus *METHANA*, Stål.

Stal. Oefv. Vet. Akad. Forh., Vol. XXXIV, no. 10, p. 36 (1877).
Shelford, T. E. S. 1909, p. 306; Gen. Ins. fasc. 109, p. 11 (1910).

Antennæ longer than body. Pronotum anteriorly parabolic, almost covering vertex of head, posteriorly very obtusely angled. Scutellum not exposed. Tegmina and wings fully developed, at least as long as the abdomen, generally longer. Supra-anal lamina: (♂) quadrate, margins not serrate, (♀) triangular, apex emarginate. Cerci long, acuminate. Femora heavily spined. Posterior metatarsus about equal in length to remaining joints, biseriately spined beneath, its pulvillus apical; remaining joints of tarsus with large pulvilli, not spined beneath.

Methana magna, Shelford.

Methana magna, Shelf. T. E. S. 1909, p. 307; Gen. Ins. fasc. 109, p. 11 (1910).

♂ and ♀. Castaneous, nitid. Head sordid testaceous, vertex, a band between the antennal sockets, a W-shaped band at base of clypeus, castaneous. Antennæ with basal joint testaceous, remainder castaneous. Pronotum with sides deflexed, posteriorly truncate. Tegmina and wings exceeding apex of abdomen. Supra-anal lamina (♂) quadrate, fimbriate, margins entire, (♀) triangular, apex widely emarginate. Cerci very long, acuminate. Genital styles (♂) very long and slender. Coxæ and front legs testaceous, mid femora rufo-testaceous with castaneous lines, mid-tibiæ and tarsi and hind legs castaneous. Posterior metatarsus a trifle shorter than remaining joints, its pulvillus large.

♂ and ♀. Total length 40-41 mm.; length of body, 34-35 mm.; of tegmina, 30-31 mm.; pronotum 10·5 mm. × 15 mm.

Hab: Sarawak (Shelford) (Oxford Mus., ♂ and ♀ types). Shelford adds: The species bears a close superficial resemblance to *Periplaneta valida*. Br., the type of which I have seen, but can readily be distinguished by the structure of the tarsi.

Methana pallipalpis, Serville.

Kakerlac pallipalpis, Serv. Ins. Orth., p. 71 (1839).
Periplaneta pallipalpis, Brunner. Syst. Blatt. p. 238 (1865).
Periplaneta pallipalpis, Saussure. Mém. Soc. Genève, Vol. XX, p. 262 (1869).
Methana pallipalpis, Kirby. Syn. Cat. Orth. Vol. I, p. 136 (1904).
?*Methana pallipalpis*, Shelford. T. E. S. 1909, p. 309; Gen. Ins. fasc. 109, p. 11 (1910).

Long. 9½ lig. (= 20 mm.) Corps d'un brun marron fort luisant. Tête plus foncée; bouche et palpes d'un testacé clair: à la naissance de chaque antenne on voit un point testacé. Prothorax presqu 'orbiculaire, très-lisse, point rebordé, un peu plus foncé que les élytres. Celles-ci dépassant le bout de l'ab-

domen de deux lignes et demie. Leur strie arquée très-prononcée, un peu oblique, l'espace circonscrit par cette strie, très-lisse et luisant. De chaque côté de la base part une ligne élevée, allant en s'oblitérant jusqu'à l'extrémité; marge extérieure débordant l'abdomen, chargée de stries obliques distinctes; le reste de l'élytre ayant des stries longitudinales peu prononcées. Ailes de la longueur des élytres, jaunâtres, finement striées et reticulées. Dessous du corps un peu plus foncé que le dessus, principalement sur les côtés. Antennes (incomplètes) atteignant au moins la moitié du corps, roussâtres, un peu pubescentes dans leur première moitié. Pattes roussâtres, les antérieures plus claires. ♀.

Brunner gives the following measurements:

		long.	
corporis	♂ ♀	21	mm.
pronoti		6·5	mm.
pron. transv.		9	mm.
fem. post.		7·5	mm.
tib. post.		8·5	mm.
tars. post.		6	mm.

Hab: Java (Serville). Sumatra (De Haan). Australia (Brunner).

Shelford (T. E. S. 1909, p. 309) remarks that as the type of this species is lost, its systematic position is quite uncertain.

Methana hosei, Shelford.

Methana hosei, Shelf. T. E. S. 1909, p. 309; Gen. Ins. fasc. 109, p. 11 (1910).

♀. Head, body and legs piceous, front coxæ and a large blotch on the posterior coxæ testaceous. Pronotum sub-quadrate, sides strongly deflexed, bordered all round with ochreous, the border being very broad on the postero-lateral and posterior margins, its inner margin sinuate. Tegmina and wings uniform castaneous, extending considerably beyond the apex of the abdomen. Supra-anal lamina triangular, cucullate, apex triangularly emarginate. Cerci moderate.

Total length 29 mm.; length of body 24 mm.; length of tegmina 23 mm.: pronotum 7·9 mm. × 9 mm.

Hab: Baram, Sarawak, (C. Hose), (Oxford Museum, type).

Methana semimarginalis, n. sp. (Plate V, fig. 28).

Nearest to *M. marginalis*, Saussure,* from Queensland, from which it differs by the yellow margin of the pronotum not being continued along the tegmina.

♀. Head not quite covered by the pronotum, ochreous. Eyes black. Antennæ dark brown. Pronotum dark chestnut

* For an illustration of *M. marginalis* see Shelford, Gen. Ins. fasc. 109, pl. II, fig. 10

brown, strongly shining, bordered in front and at the sides with ochreous, the border being widest at the postero-lateral angle. Tegmina exceeding the abdomen in length, castaneous, shining, somewhat lighter towards the apex. Body shining brown, darker posteriorly than anteriorly. Cerci almost black.

total length	♀	23	mm.
length of pronotum		7·2	mm.
width of pronotum		9·5	mm.
length of tegmina		17	mm.
length of antennæ		18	mm.
length of cerci		5	mm.

Hab: Kuching, Sarawak, 1898. One example. Type in Sarawak Museum.

Genus ***DORYLAEA,*** Stål.

Stal. Oefv. Vet.—Akad. Forh., Vol. XXXIV, no. 10, p. 36 (1877).

Shelford, Gen. Ins. fasc. 109, p. 13 (1910).

Sexes similar. Pronotum anteriorly arcuate, posteriorly truncate. Tegmina semi-corneous, venation obsolete, not extending beyond the fourth or fifth abdominal tergite. Wings reduced or fully developed. Tibial spines triseriately arranged on the outer aspect of the tibiæ. Posterior metatarsi exceeding the following joints in length, armed beneath; second joint short, armed beneath, third joint unarmed; pulvilli moderately enlarged.

Dorylaea flavicincta, De Haan.

Blatta (*Periplaneta*) *flavicincta*, De Haan. Temminck, Verhand. Orth. p. 50 (1842).

Periplaneta flavicincta, Brunner. Syst. Blatt., p. 231 (1865).

Periplaneta flavicincta, Tepper. Trans. R. Soc. S. Austr. 1894, p. 184.

Methana flavicincta, varr. b, c. Sauss. and Zehnt. Grandidier, Hist. Madagascar, Orth. Vol. I, p. 70 (1895).

Dorylaea zehntneri. Kirby. A. M. N. H. (7), Vol. XII, p. 374 (1903).

Methana flavicincta, Kirby. Syn. Cat. Orth. Vol. I, p. 136 (1904).

Methana flavicincta, Rehn. Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).

Dorylaea flavicincta, Shelford. Gen. Ins. fasc. 109, p. 13 (1910).

De Haan's description is as follows:

Elytris abdomine in utroque sexu brevioribus, fascia laterali flava, juxta prothoracis marginem lateralem producta.

	♂	♀
long. corp.	8‴	6‴
long. elytr.	5‴	10‴

We add Brunner's description:

Castanea, nitida. Pronoto lævissimo, oblongo-semiorbiculari, margine postico recto, angulis vix rotundatis, maculâ flavâ centrali et vittis flavis intra-marginalibus lateralibus acute delineatis in aream marginalem elytrorum productis. Elytris et alis abdomine brevioribus. ♂.

long.	♂	
corporis	18	mm.
pronoti	7	mm.
pron. transv.	8·5	mm.
elytrorum	10	mm.
fem. post.	6·5	mm.
tib. post.	6·5	mm.
tars. post.	6	mm.

Hab: Java (De Haan).—Borneo, Java, Sumatra, Madagascar (Shelford).—Sumatra (Rehn).

Genus ***BLATTA,*** Linné.

Linné. Systema Naturae (ed. X), Vol. I, p. 424 (1758).
Shelford. Gen. Ins. fasc. 109, p. 15 (1910).

Sexes dissimilar. Antennæ long, setaceous. Pronotum trapezoidal, not covering vertex of head. Tegmina and wings of ♂ variable, not attaining the apex of the abdomen. Wings of ♀ absent, tegmina squamiform or quadrate. Femora strongly armed; tibial spines on outer aspect triseriately arranged. Tarsi elongate, metatarsi longer than the succeeding joints, spined beneath, second joint long and spined beneath, third and fourth joints shorter, spined beneath; all the pulvilli minute, apical.

Blatta orientalis, Linné.*

Blatta orientalis, L. Syst. Nat. (ed. X), Vol. I, p. 424 (1758).
Blatta orientalis, Stoll. Spectres, p. 6, pl. IV d, figs. 15-17 (1813).
Kakerlac orientalis, Serville. Ann. Sci. Nat. Vol. XXI, p. 29 (1831); Ins. Orth. p. 72 (1839).
Periplaneta orientalis, Burmeister. Handb. Ent. Vol. II, p. 504 (1838).
Periplaneta orientalis, Saussure. Mém. Mex. Blatt., p. 73 (1864).
Periplaneta orientalis, Brunner. Syst. Blatt., p. 226 (1865).
Blatta orientalis, Kirby. Syn. Cat. Orth. Vol. I, p. 137 (1904).
Blatta orientalis, Shelford. Gen. Ins. fasc. 109, p. 15 (1910).

Brunner describes this cosmopolitan species as follows:

Fusco-ferruginea vel castanea. Elytris maris abdominis apicem non attingentibus, truncatis; feminæ mesonotum paulo superantibus, lateralibus. Alis utriusque sexus elytris brevioribus. Laminâ supra-anali maris transversâ, margine postico membranaceo; feminæ compressâ, triangulariter excisâ. ♂ ♀.

---

* For a complete list of synonyms see Kirby, Syn. Cat. Orth. Vol. I, p. 137.

long.	♂		♀	
corporis	20-23	mm.	19-23	mm.
pronoti	5- 6·5	mm.	6-6·5	mm.
pron. transv.	7- 7·5	mm.	8·5-9·5	mm.
elytrorum	12-13·5	mm.	4·5-5	mm.
fem. post.	7·5- 8·5	mm.	7·5-8·5	mm.
tib. post.	8- 9·5	mm.	7·5-8·5	mm.
tars. post.	7- 7·5	mm.	6·5-7·	mm.

Hab: Cosmopolitan.

Blatta concinna, De Haan. (Plate I, fig. 6).

Blatta (Periplaneta) concinna, De Haan. Temminck, Verhand. Orth. p. 50 (1842).

Periplaneta concinna, Brunner. Syst. Blatt. p. 229 (1865).

***Periplaneta pallipalpis,* var. (?), Walker. Cat. Blatt. B. M. p. 132 (1868).**

Periplaneta borrei, Saussure. Mém. Soc. Genève, Vol. XXIII, p. 113, pl. X, fig. 38 (1873).

***Stylopyga borrei,* Krauss. Semon. Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 748 (1903).**

***Stylopyga concinna,* Krauss. Ibid. p. 747 (1903).**

***Blatta brunneri,* Kirby. A. M. N. H. (7), Vol. XII, p. 375 (1903).**

***Methana concinna,* Kirby. Syn. Cat. Orth. Vol. I, p. 136 (1904).**

***Blatta concinna,* Shelford. Gen. Ins. fasc. 109, p. 15 (1910).**

Elytris abdomine in utroque sexu brevioribus, uti et prothorace fuscis.

long. corp ♂ 5½‴ (= 11·5 mm); ♀ 6‴ (= 12·6 mm).
long. elytr. 4‴ (= 8·4 mm); 4‴ (= 8·4 mm).

Brunner gives the following description:

Fusco-castanea, unicolor. Elytris abdomine in utroque sexu corpore brevioribus, acuminatis. Alis rudimentariis. ♂ ♀.

	♂	
long. corporis	12·5	mm.
,, pronoti	4·5	mm.
pron. transv.	5·2	mm.
long. elytrorum	9	mm.
fem. post.	5	mm.
tib. post.	5	mm.
tars. post.	4·5	mm.

Hab: Java (De Haan; Krauss).—Australia (Vienna Museum).—Malay Archipelago, Hongkong, Japan, Australia (Shelford).—Bukit Timah Rd., Singapore (Raffles Museum).

Genus ***STYLOPYGA,*** Fischer von Waldheim.

Fischer von Waldheim. Orth. Ross. p. 68 (1846).

Brunner von Wattenwyl. Syst. Blatt. p. 222 (1865).

Shelford, Gen. Ins. fasc. 109, p. 14 (1910).

Sexes similar. Tegmina reduced to squamiform lobes, wings absent. Sixth abdominal tergite not enlarged nor declivous. Tibial spines on outer aspect triseriately arranged. Posterior metatarsus longer than the succeeding joints, spined beneath, its pulvillus small, apical; second and sometimes the third joint spined beneath; all the pulvilli small, apical.

Key to the Malayan Species of Stylopyga.

(Adapted from Shelford, A. M. N. H. (8), Vol. VIII, p. 6.)

1. **Tegminal rudiments present.**
   2. **With variegated markings.** ***S. rhombifolia,*** **Stoll.**
   2¹. **Unicolorous.**
      3. **Tegminal rudiments transversely truncate, almost square.** ***S. picea,*** **Brunner.**
      3¹. **Tegminal rudiments with apex rounded elliptical.** ***S. semoni, Krauss.***

1¹. **Tegminal rudiments absent.** ***S. proposita,*** **Shelf.**

Stylopyga rhombifolia, Stoll. (Plate V, fig. 24).

Blatta rhombifolia, Stoll. Spectres, Blatt. p. 5, pl. III 3*d*, fig. 13 (1813).

Periplaneta histrio, Saussure. Rev. Zool. (2), Vol. XVI, p. 318 (1864); Mém. Mex., Blatt. p. 73 (1864).

Periplaneta decorata, Brunner. Syst. Blatt. p. 224 (1865).

Periplaneta histrio, Walker. Cat. Blatt. B. M. p. 130 (1868).

Periplaneta rhombifolia, Saussure. Mém. Soc. Genève, Vol. XX, p. 260 (1869).

Polyzosteria heterospila. Walker. Cat. Blatt. Suppl. p. 35 (1871).

Stylopyga decorata, Brunner. Ann. Mus. Genova (2), Vol. XIII, p. 35 (1893).

Dorylaea rhombifolia, Saussure and Zehntner. Grandidier, Hist. Madagascar, Orth. p. 73 (1895).

Dorylaea rhombifolia, Kirby Syn. Cat. Orth. Vol. I, p. 135 (1904).

Stylopyga rhombifolia, Shelford. Gen. Ins. fasc. 109, p. 14 (1910).

Brunner describes this cosmopolitan species as follows:

Fulvo-et fusco-variegata. Elytris maris et feminæ lobiformibus, mesonotum non superantibus; alis nullis. Laminâ supra-anali utriusque sexus triangulari, medio sulcatâ. ♂ ♀.

Long.	♂		♀	
corporis	18-22	mm.	22	mm.
pronoti	7	mm.	8	mm.
pron. transv.	9	mm.	10	mm.
elytr.	3·5	mm.	3·5	mm.
fem. post.	7	mm.	9	mm.
tib. post.	8	mm.	9	mm.
tars. post.	7	mm.	8·	mm.

Hab: Cosmopolitan.—Singapore (Raffles Museum).—Banting, Sarawak (Rev. G. Dexter Allen).

Stylopyga picea, Brunner von Wattenwyl.

Periplaneta picea, Brunner. Syst. Blatt. p. 223 (1865).

Blatta picea, Kirby. Syn. Cat. Orth. Vol. I, p. 138 (1904).

Dorylaca picea, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 553 (1904).

Stylopyga picea, Shelford. Gen. Ins. fasc. 109, p. 14 (1910).

Aterrima, nitida, oblonga, convexa. Pronoto oblongo. Elytris feminæ lobiformibus, lateralibus, mesonoti longitudine, apice truncatis. Alis nullis. Laminâ supra-anali emarginatâ, margine membranaceo. ♀.

long.	♀
corporis	25 mm.
pronoti	7·5 mm.
pron. transv.	9 mm.
elytrorum	3·5 mm.
femorum post.	7 mm.
tibiarum post.	9 mm.
tarsorum post.	7 mm.

Hab: Nicobars (Brunner).—Trang, Lower Siam, Malay Peninsula (Rehn).

Stylopyga semoni, Krauss.

Stylopyga semoni, Krauss. Semon. Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 751 (1903).

Stylopyga semoni, Shelford. Gen. Ins. fasc. 109, p. 14 (1910).

Nigra, nitidissima, oblonga, lateribus fere parallelis, convexa. Caput convexum, subtilissime remote punctatum. vertice sub pronoto parum prominulo, oculis inter se valde distantibus, maculis ocelliformibus parvis, flavescentibus, clypeo cum labro rufescente. Antennæ rufescentes, apicem versus fuscescentes. Pronotum semiorbiculare, convexum, subtilissime remote punctatum, margine postico subrecto, angulis lateralibus obtusis. Mesonotum postice subrectum, metanotum late emarginatum, angulis lateralibus parum productis, obtusis. Elytra lobiformia, mesonoti longitudine, apice rotundata, punctulis impressis obsita. Alæ nullæ. Pedes rufo-badii, tibiis posticis castaneis. Tarsi postici articulo primo ceteris unitis longiore, articulo secundo pulvillo minimo apicali instructo. Abdomen convexum, nigrum, subtus in medio rufescens. Tergita omnia angulis lateralibus acute productis instructa. Tergitum septimum postice utrinque profunde sinuatum, parte mediana porrecta, rotundata. Lamina supra-analis ♂ lata, utrinque biimpressa, postice subemarginata, ♀ huic fere conformis, sed fornicata, postice subexcisa. Cerci late lanceolati, apice acuti. Lamina subgenitalis ♂ postice impressa, late emarginata, stylis spiniformibus, incurvis.

		♂		♀	
longitudo	corporis	17-20	mm.	22	mm.
„	pronoti	5-6	mm.	6-65	mm.
latitudo	„	6·5-8	mm.	7·5-8	mm.
longitudo	elytrorum	3·5-4	mm.	4	mm.

Hab: Tjibodas (Java).

Krauss adds:

Steht *S. picea*, Brunner, von Sambelong (Nicobaren), die nur im ♀ Geschlechte bekannt ist, sehr nahe und unterscheidet sich von ihr durch geringere Grösse, die hinten nicht gerade abgeschnittenen, sondern abgerundeten Elytren, und die gleichmässig chitinisirte, am Hinterrande undurchsichtige Lamina supra-analis ♀.

♀ Larven, letztes Stadium (19 mm. lang), gleichen in der Färbung den Erwachsenen vollständig. Von den rudimentären Elytren zeigt sich noch keine Spur.

Stylopyga proposita, Shelford.

Stylopyga proposita, Shelf. A. M. N. H. (8), Vol. VIII, p. 6, pl. 1, fig. 1 (1911).

♂. Piceous, nitid. Labrum and clypeus castaneous; palpi piceous. Antennæ castaneous. Tegminal rudiments absent. Seventh abdominal tergite obtusely produced. Supra-anal lamina sharply triangular, surpassing the subgenital lamina, which is rounded, sides not notched; styles straight, spiniform. Cerci flattened, moderate. Posterior metatarsus longer than succeeding joints; all the pulvilli minute, apical; arolia absent.

♀. Similar, but supra-anal lamina obtusely produced, apex truncate.

Total length (♂ ♀) 24 mm.; pronotum 7·5 × 10 mm.

Hab: Java, Batavia, Tanah-Abang (P. Serre, 1904). Two examples. Types in the Paris Museum.

Genus ***PERIPLANETA,*** Burmeister.

Burmeister. Handbuch d. Entomologie, Vol. II, p. 502 (1838).
Shelford. Gen. Ins. fasc. 109, p. 17 (1910).

Sexes similar. Antennæ very long, slender. Pronotum trapezoidal, not covering vertex of head, sides deflexed, its greatest width behind the middle. Posterior angles of meso— and metanotum not produced as slender membranous processes. Tegmina and wings usually extending considerably beyond the apex of the abdomen, the former coriaceous. Cerci and genital styles long. Legs long; femora and tibiæ strongly spined, tibial spines triseriately arranged. Tarsi long and slender, posterior metatarsus longer than remaining joints; all the joints spined beneath, their pulvilli minute, apical.

Periplaneta americana, Linné.* (Plate IV, fig. 21).

Blatta americana, L. Syst. Nat. (ed. X), p. 424 (1758).
Blatta americana, Herbst. Fuessly Archiv, Vols VII and VIII (1786), p. 185, pl. XLIX, fig. 6.
Blatta americana, Stoll, Spectres, Blatt. p. 3, pl. I d, fig. 4 (1813).
Kakerlac americana, Serville. Ann. Sci. Nat. Vol. XXII, p. 39 (1831).
Kakerlac americana, Brullé, Hist. Nat. Ins. Vol. IX, p. 53, pl. IV, fig. 3 (1835).
Periplaneta americana, Burmeister. Handb. Ent. Vol. II, p. 503 (1838).
Periplaneta americana, Saussure. Mém. Mex., Blatt., p. 71 (1864).
Periplaneta americana, Brunner. Syst. Blatt. p. 232, pl. V, fig. 24 A-E (1865).
Periplaneta stolida, Walker. Cat. Blatt. Brit. Mus. p. 128 (1868).
Periplaneta americana, Kirby. Syn. Cat. Orth. Vol. I, p. 140 (1904).
Periplaneta americana, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

Brunner's description is as follows:

Ferruginea. Pronoto subrotundo, fasciâ intramarginali pallidâ, obsoletâ. Elytris abdomen valde superantibus. ♂ ♀.

Long.	♂	(maximi)	♀
corporis	28-32 mm.	38 mm.	28-31 mm.
pronoti	7·5- 8 mm.	10·5 mm.	9-10 mm.
pron. transv.	9·5-11 mm.	13 mm.	11-12 mm.
elytrorum	28-32 mm.	40 mm.	26-28 mm.
fem. post.	10 mm.	13·5 mm.	10-11 mm.
tib. post.	10-12 mm.	17·5 mm.	13-14 mm.
tars. post.	8-10 mm.	? mm.	10-11 mm.

Hab: Cosmopolitan.

Periplaneta australasiae, Fabricius * (Plate IV, fig. 22).

Blatta australasiae, Fabr. Syst. Ent. p. 271 (1775).
Periplaneta australasiae, Burmeister. Hand. Ent. Vol. II, p. 503 (1838).
Periplaneta zonata, De Haan, Temminck, Verhand. p. 49 (1842).
Periplaneta australasiae, Saussure. Mém. Mex. Blatt. p. 72 (1864).
Periplaneta australasiae, Brunner. Syst. Blatt. p. 233 (1865).
Periplaneta repanda, Walker. Cat. Blatt. B. M. p. 125 (1868).
Periplaneta subcincta, Walker. Cat. Blatt. B. M. p. 126 (1868).
Periplaneta inclusa, Walker. Cat. Blatt. B. M. p. 126 (1868).
Polyzosteria subornata, Walker. Cat. Blatt. Suppl. p. 35 (1871).
Periplaneta emittens, Walker. Cat. Blatt. Suppl. p. 37 (1871).
Periplaneta australasiae, Kirby. Syn. Cat. Orth. Vol I, p. 141 (1904).
Periplaneta australasiae, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

Brunner's description is as follows:

Fusco-ferruginea. Fronte fuscâ, maculâ trigonâ, vel notâ minimâ pallidâ. Pronoto nigro, transverse-elliptico, margine postico subrecto, cingulo intra-marginali acute delineato, ely-

* Only the more important references to literature are given. For a complete list see Kirby's "Synonymic Catalogue."

trorumque vittâ humerali flavis. Elytris abdomen superantibus. ♂ ♀.

Long.	♂	♀
corporis	24 mm.	26 mm.
pronoti	7 mm.	8 mm.
pron. transv.	9·5 mm.	11 mm.
elytr.	27· mm.	24 mm.
fem. post.	8 mm.	9 mm.
tib. post.	10 mm.	11 mm.
tars. post.	8 mm.	9 mm.

Hab: Cosmopolitan.—Singapore (Raffles Museum). Bukit Kutu, Selangor (Raffles Museum).—Korinchi Valley, Sumatra (Messrs. Robinson and Kloss).—Banting, Sarawak (Rev. G. Dexter Allen).

Periplaneta crassa, Karny.

Periplaneta crassa, Karny. Wiss. Ergebn. Exped. Filchner China u Tibet, Vol. X, I, p. 19 (1908).

Periplaneta crassa, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

Alæ margine integro, inter cubitum et anales ad marginem campo triangulari intercalato.

Statura majore. Long. corporis ♀ = 27 mm., elytrorum ♀ = 20 mm. Alæ fusco-testaceæ, excepto campo anali turbido.

Hab: Borneo.

Periplaneta lata, Herbst.

Blatta lata, Herbst. Fuessly Archiv, Vols. VII and VIII, p. 185, pl. XLIX, fig. 6 (1786).

Blatta lata, Herbst. Catalogue critique, p. 171 (1794).

Periplaneta lata, Kirby. Syn. Cat. Orth. Vol. I, p. 141 (1904).

Periplaneta lata, Shelford. Gen. Ins. fasc. 109, p. 18, pl. II, fig. 16 (1910).

Herbst's 'Catalogue critique' merely says:

"Elle resemble fort à la précédente (i.e. *B. americana*), mais elle est plus large et plus courte."

To judge by Shelford's figure in 'Gen. Ins.' the total length of this insect seems to be 27 mm.

Hab: Borneo (Shelford).

Periplaneta spinosostylata, Krauss.

Periplaneta spinosostylata, Krauss. Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 752, pl. LXVII, fig. 2 (1903).

Periplaneta spinosostylata, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

♂. Rufo-castanea, nitida. Statura parva, elongata. Caput sparsim punctulatum. Oculi nigri. Antennæ rufæ. Pronotum semiorbiculare convexum, margine postico rotundato,

sparsim subtilissime punctatum. Elytra alæque apicem abdominis longitudine valde superantes, illa apice rotundata, venis longitudinalibus bene expressis, hæ elytris parum breviores. Pedes rufo-badii. Abdomen supra sordide ochraceum, apicem versus castaneum, subtus rufo-castaneum. Tergita omnia angulis lateralibus acute productis instructa. Tergitum septimum postice utrinque profunde sinuatum, parte mediana rotundata. Lamina supra-analis triangularis, postice rotundata, apice emarginata, rufo-ciliata. Cerci lanceolati, acuti, nigro-fusci. Lamina subgenitalis lata, quadrangularis, postice rotundatim emarginata. Styli flexuoso-incurvi, a basi fere usque ad medium dilatato-compressi, intus spina mediana, acuta, oblique introrsum spectante armati, dein subito attenuati, cylindrici, apice acuti.

Longitudo	corporis	17 mm.
„	pronoti	4 mm.
Latitudo	„	5 mm.
Longitudo	elytrorum	21 mm.

Hab: Tjibodas (Java).

Krauss adds:

Mit *P. pallipalpis* (Serv.) von Java, Padang und Australien nahe verwandt, aber kleiner, heller gefärbt und mit deutlicher ausgeprägten Längsadern auf den Elytren versehen. Ausgezeichnet durch die bis zur Mitte verbreiterten und hier an der Innenseite mit einem feinen, scharfen, nach innen und etwas nach hinten gerichteten Dörnchen bewehrten Styli. Eine derartige Bewehrung der Styli ist bei den Blattiden bisher nicht zur Beobachtung gelangt.

Periplaneta malaica, Karny.

Periplaneta malaica, Karny. Wiss. Ergebn. Exped. Filchner China u. Tibet, Vol. X, I, p. 19 (1908).

Periplaneta malaica, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

Vena media alarum ipsa haud furcata, antrorsum ramulum 1 furcatum vel 2 simplices emittens. Lamina supra-analis ♂ marginibus lateralibus retrorsum fortiter convergentibus, medio triangulariter excisa, angulis distinctis. Lamina subgenitalis ♂ rotundata. Species indo-malaica.

Hab: Siley; Banguey (off B. N. Borneo).

Periplaneta regina, Saussure.

Periplaneta regina, Sauss. Rev. Zool. (2), Vol. XVI, p. 320 (1864).
Periplaneta regina, Shelford. Gen. Ins. fasc. 109, p. 18 (1910).

♂. Depressa, crassa, testacea, canthis, spinis, tibiis et tarsis posticis, abdomine subtus, fuscis vel fusco-variis. Caput prominulum, fascia transversa verticis, frontis et oris, fusca. Pronotum corneum, læve, convexiusculum, latum, antice attenuatum et truncatum. Elytra abdomen superantia, striata;

campo marginali lato, venis costalibus bifurcatis; campo postico dense striato, inter venas densissime et tenuissime reticulato; campo anali lævi; ovato, sat angusto et elongato; alarum campo antico ubique æqualiter secundum longitudinem ramoso-venoso; area fenestrata, angustissima, lineam medianam membranaceam efficiente. Cerci et styli longissimi. Pronotum fuscum, fascia marginali lata marginis antici testacea, in elytrorum basi producta, et fascia transversa libera marginis postici ornatum; elytra castanea; alarum campus anticus ferrugineus, apicem versus secundum marginem costalem fuscescens; campus posticus griseus. Long. 36 mm., cum elytris 38 mm.

Hab: Malacca.

Periplaneta truncata, Krauss.

Periplaneta truncata, Krauss. Zool. Anzeiger, Vol. XV, p. 165 (1892).

Periplaneta truncata, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 555 (1904).

Periplaneta truncata, Shelford. Gen. Ins. fasc. 109, p. 19 (1910).

Præcedenti (i.e. *Periplaneta americana*) colore et magnitudine valde affinis, differt imprimis lamina supra-anali ♂ brevi, postice truncata, ♀ triangulari, breviter excisa, cercis ♂ ♀ brevioribus, lanceolatis. ♂ ♀ Long. 26-32 mm.—

Hab: Tenerife; Brazil; New Britain (Krauss).—'Cosmopolitan' (Shelford). Recorded by Rehn from Batu Sangkar, Padangsche Bovenland, Sumatra.

Periplaneta robinsoni, n. sp. (Plate IV, fig. 23.)

Apparently closely allied to *P. lata*, Herbst, of which species, however, though it is figured by Shelford (Gen. Ins. fasc. 109, pl. II, fig. 16), I have not been able to discover an adequate description.

♀. Head almost covered by the pronotum, shining black except for the labrum which is light brown. Eyes black. Antennæ dark brown. Pronotum pitch black, shining. Tegmina exceeding the abdomen in length, shining castaneous. Legs castaneous. Abdomen castaneous anteriorly, black posteriorly. Cerci black.

Total length	♀	30 mm.
length of pronotum		8 mm.
width of pronotum		10 mm.
length of tegmina		24 mm.
fem. post.		9 mm.
tib. post.		10 mm.
tars. post.		7 mm.

Hab: Sandaran Agong, 2500′, Korinchi Valley, Sumatra. Collected by Messrs. H. C. Robinson and C. Boden Kloss, June 1914. One example. ♀.

I have much pleasure in naming this species after Mr. Robinson, the leader of this expedition to Sumatra.

Genus ***HOMALOSILPHA,*** Stål.

Stal. Bih. Svensk. Akad., Vol. II,no. 13, p. 13 (1874).
Shelford. Gen. Ins. fasc. 109, p. 19 (1910).

Closely resembles *Periplaneta,* Burmeister, but the pronotum discoïdal, its sides not deflexed, its greatest width at the middle.

Homalosilpha ustulata, Burmeister. (Plate VII, fig. 38).

Periplaneta ustulata, Burm. Handb. Ent. Vol. II, p. 503 (1838).
Kakerlac thoracica, Serville. Ins. Orth. p. 69, pl. II, fig. 1 (1839).
Periplaneta ustulata, Brunner. Syst. Blatt. p. 235 (1865).
Periplaneta configurata, Walker. Cat. Blatt. B. M. p. 145 (1868).
Homalosilpha ustulata, Kirby. Syn. Cat. Orth. Vol. I, p. 143 (1904).
Homalosilpha ustulata, Shelford. Gen. Ins. fasc. 109, p. 19 (1910).

Fusco-nigra, pronoto pallido, disco maculis nigris; elytris obscure-castaneis. Long. corp. $1\frac{1}{4}'''$ (=31 mm.).

Brunner's description is as follows:

Fusco-nigra. Pronoto planissimo, sub-sexangulari, testaceo, disco maculis et punctis nigris sparsis. Elytris castaneis. ♂ ♀.

Long.	♂	♀
corporis	23-29 mm.	28 mm.
pronoti	6-8 mm.	8 mm.
pron. transv.	8·5-11 mm.	11.5 mm.
elytrorum	23-32 mm.	31 mm.
fem. post.	8-9 mm.	10 mm.
tib. post.	8-12 mm.	12 mm.
tars. post.	6-8 mm.	7·5 mm.

Hab: Java (Burmeister: Brunner).—India to Great Sunda Isl. (Shelford).—The Raffles Museum possesses a specimen from Bukit Kutu, Selangor (April 1915).

Homalosilpha decorata, Serville.

Blatta decorata, Serv. Ins. Orth. p. 99 (1839).
Homalosipha decorata, Shelford. T. E. S. 1906, p. 270, pl. XIV, fig. 8; Gen. Ins. fasc. 109, p. 19 (1910).

Long. 9 lig. (=19 mm.) Corps d'un brun-noirâtre fort luisant, ainsi que la tête et les pattes. Dernier article des palpes maxillaires tronqué très-obliquement à son extrémité. Prothorax assez court, un peu inégal, d'un brun-marron foncé très-luisant; son bord postérieur arrondi ainsi que les latéraux; l'antérieur coupé droit: il y a vers chaque bord latéral, une bandelette longitudinale d'un beau jaune, un peu arquée en dedans, partant du bord antérieur et n'atteignant pas tout à fait le bord postérieur. Elytres de la couleur du prothorax,

beaucoup plus longues que l'abdomen: strie arquée bien prononcée; leur tiers postérieur chargé de stries longitudinales serrées, bien distinctes. Ailes transparentes, enfumées, de la longueur des élytres. Antennes de la couleur du corps; cuisses épineuses en dessous: épines tibiales plus fortes que celles des cuisses. ♀.

Hab: Patrie inconnue. Collection de M. Marchal (Serville).—Since recorded by Shelford (T. E. S. 1906, p. 271) from Mt. Penrissen, Sarawak.

Genus ***EROBLATTA,*** Shelford.

Shelford. Genera Insectorum, fasc. 109, p. 19 (1910).

Antennæ moniliform, shorter than the body. Pronotum almost rectangular, as long as broad, sides not deflexed. Tegmina and wings considerably exceeding the apex of the abdomen; the former narrow with the anal field long and pointed, the marginal field deflexed. Cerci long and pointed. Femora strongly armed beneath. Spines on outer aspect of tibiæ triseriately arranged. Posterior metatarsi longer than the succeeding joints, its pulvillus apical. Arolia moderate.

Eroblatta borneensis, Shelford.

Protagonista borneensis, Shelf. A. M. N. H. (8), Vol. I, p. 159, pl. IX, fig. 2 (1908); Gen. Ins. fasc. 109, p. 20, (1910).

♂. Head piceous, opaque, with a few scattered punctures, mouth-parts piceous; eyes closer together than antennal sockets. Antennæ with moniliform joints, shorter than the body, piceous, with a testaceous band near the apex. Pronotum opaque piceous, with scattered erect pubescence; a shallow transverse impression in anterior third and two oblique impressions in posterior third. Tegmina rufo-castaneous, exceeding the apex of the abdomen, narrow; marginal field narrow, deflexed; anal vein well-marked, reaching nearly halfway down the sutural margin. Abdomen piceous, with the basal segments rufescent above, testaceous below. Supra-anal lamina quadrately produced, posterior angles spiniform, posterior margin concave, exceeded by the subgenital lamina, which is semiorbicular, and provided with a pair of slender styles. Cerci long, acuminate, castaneous. Front legs castaneous, mid and hind legs with the coxæ (except at the base) and the femora (except at the apex) testaceous, otherwise castaneous. Front femora with a complete row of spines on anterior margin beneath, two or three on posterior margin; mid and hind femora with 5 to 7 spines on each margin. Tarsal arolia larger than in the preceding species (viz. *Protagonista lugubris*, Shelford, from Tonkin).

Total length 25 mm.; length of body 20 mm.; length of tegmina 20 mm.; pronotum 4·8 × 4·1 mm.

Hab: Sarawak, (Shelford). Type in Oxford Museum.

Genus ***THYRSOCERA,*** Burmeister.

Burmeister. Handbuch d. Entomologie, Vol. II, p. 498 (1838).
Shelford. Gen. Ins. fasc. 109, p. 11 (1910).

Sexes similar, completely winged. Antennæ incrassated in basal half and plumose. Pronotum trapezoidal, sides deflexed. Tegmina and wings exceeding the apex of the abdomen. Cerci moderately long, flattened, spatulate. Femora sparsely armed. Tibial spines on outer aspect triseriately arranged. Posterior metatarsus equalling the length of the remaining joints, spined beneath, its pulvillus small, apical: pulvilli of second and third joints larger, occupying the greater extent of the joint.

Thyrsocera spectabilis, Burmeister.

Thyrsocera spectabilis, Burm. Handb. Ent. Vol. II, p. 498 (1838).
Thyrsocera spectabilis, Brunner. Syst. Blatt. p. 121 (1865).
Thyrsocera spectabilis, Kirby. Syn. Cat. Orth. Vol. I, p. 78 (1904).
Thyrsocera spectabilis, Shelford. T. E. S. 1906, p. 250; Gen. Ins. fasc. 109, p. 12 (1910).

Nigra, pronoto aurantiaco, maculâ mediâ cordatâ nigrâ; elytris maculis duabus alisque medio flavis; antennis annulo albo; cercis analibus lanceolatis flavis. Long. corp. 10″ (=21 mm.).

Brunner merely quotes this description, and gives the length of this species as 23 mm.

Hab: Nepal (Burmeister).—Nepal; Ceylon; Malacca (Shelford, in T. E. S. 1906, p. 250).

Thyrsocera speciosum, Walker.

Ellipsidium speciosum, Walk. Cat. Blatt. B. M. p. 214 (1868).
Thyrsocera speciosum, Shelford. T. E. S. 1906, p. 250, pl. XIV, fig. 5; Gen. Ins. fasc. 109, p. 12 (1910).

♀. Nigra, fusiformis, robusta; caput prothoracem sat superans; oculi inviem remoti; antennæ crassæ, apud medium fasciculatæ et albo fasciatæ; prothorax maculis duabus posticis connexis maculisque duabus anticis luteis magnis; cerci lati, fusiformes; pedes breves, crassi; alæ anticæ maculis duabus luteis, 1a basali magna, 2a media maxima.

♀. Black, fusiform, smooth, shining. Head extending rather beyond the prothorax. Eyes testaceous, wide apart. Antennæ very stout, tufted in the middle; a white band composed of two joints beyond the tufted part. Prothorax much narrower in front, much longer than half its breadth, with a large luteous spot on each side in front, and on the hind border with a luteous band, which is very much dilated on each side; fore border truncated; sides rounded; hind border slightly rounded. Supra-anal lamina bilobed. Cerci fusiform, broad, flat. Legs thick, short; femora with stout spines. Wings not extending

beyond the abdomen. Fore wings coriaceous, corneous towards the base, with two luteous costal spots; first spot large, near the base; second very large in the middle. Length of the body 8½ lines (= 18 mm.); of the wings 17 lines (= 36 mm.).

Hab: Eastern Archipelago. In Mr. Saunders' collection.

According to Shelford (T. E. S. 1906, pp. 249-250) the two species *Th. spectabilis* and *Th. speciosum* may be distinguished as follows:

Th. spectabilis, Burm. (Nepal, Ceylon, Malacca; type in Berlin Museum). Three joints beyond the antennal tuft white. Pronotum broadly margined with yellow all round its border, leaving a trefoil-shaped black centre.

Th. speciosum, Wlk. (E. Indian Archipelago; type in Oxford Museum). Two joints beyond the antennal tuft white. Pronotum with posterior margin and with two antero-lateral spots yellow, the black of the disc forming a cruciform figure. Ante-penultimate segment of abdomen beneath yellow.

Genus ***MIROBLATTA,*** Shelford.

Shelford. Trans. Entom. Society, London, p. 271 (1906); Gen. Ins. fasc. 109, p. 21 (1910).

Pronotum sub-cucullate, anteriorly parabolic, covering vertex of head, posteriorly truncate, exposing the scutellum, disc with elevated ridges. Tegmina and wings not extending beyond the apex of the abdomen. Tegmina very broad, corneous, venation obscured, anal vein absent; mediastinal field on under surface elevated, keeled, the space between mediastinal and radial veins broad, inflexed, forming together with the mediastinal field an epipleuron. Wings broadly ovate, coriaceous, anterior part nearly twice as broad as posterior part, outer margin deeply indented at apex of dividing vein, posterior part not folding in fan-like manner. Genital styles minute. Cerci long, sharply pointed. Legs long, slender; femora unarmed beneath; spines on outer aspect of posterior tibiæ biseriately arranged. Posterior metatarsi longer than remaining joints, unarmed beneath: the pulvilli large, the second occupying the whole length of the joint.

Miroblatta petrophila, Shelford.

Miroblatta petrophila, Shelf. T. E. S. 1906, p. 272, pl. XIV, figs. 4, 4a; Gen. Ins. fasc. 109, p. 21 (1910).

♂. Elongate ovate, dark castaneous. Head fuscous, front concave, lower face rugose, clypeus flavo-testaceous, mouth parts castaneous; antennæ longer than total length of body, a broad white annulus before the middle, occupying twenty-one joints. Pronotum castaneous, disc with strong elevated ridges in the form of a horseshoe, giving off anteriorly two short diverging branches and laterally two backwardly directed branches which

are less strongly marked, a median carina on the anterior cucullate part of the pronotum; area between the limbs of the horseshoe rugose, ridges and adjacent parts black, a pair of orange spots on each side of the anterior carina and another pair on each side of the limbs of the horseshoe-shaped ridge. scattered about the surface of the pronotum are numerous small tubercles bearing erect setæ. Tegmina castaneous, the radial vein black. Wings flavo-hyaline, marginal field and apex suffused with flavo-castaneous. Abdomen dark castaneous, paler at the base above. Legs dark castaneous, apices of femora flavo-castaneous; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$. $\frac{1}{1}$, no geniculer spines on anterior femora.

Total length 10 mm., length of tegmina 26 mm., pronotum 13 mm. × 16 mm.

Hab: Mt. Santubong, Sarawak, 2500 feet, amongst rocks. One example.

Shelford adds: About half-a-dozen specimens of this cockroach were captured by a native collector in August 1900. He stated that they ran with great activity and that they were incapable of flight.

Genus ***ARCHIBLATTA,*** Vollenhoven.

Vollenhoven. Tijdschr. *v.* Ent. Vol. V, p. 106 (1862).
Shelford. Gen. Ins. fasc. 109, p. 22 (1910).

Sexes dissimilar. Antennæ elongate. Pronotum slightly longer than broad, trapezoidal, anteriorly emarginate, not covering vertex of head, disc rugose. Male with fully-developed tegmina and wings considerably exceeding apex of abdomen. Tegmina with long anal field; mediastinal area deflexed. Wings with posterior part not broader than anterior part, outer margin deeply indented at apex of dividing vein. Female entirely apterous, with the abdomen ample. Genital styles small. Cerci moderate. Femora unarmed beneath. Tibiæ very sparsely armed, the spines arranged on the outer aspect in a single row. Posterior metatarsus shorter than the succeeding joint, unarmed beneath: all the pulvilli large.

Archiblatta hoevenii, Vollenhoven. (Plate V, fig. 25).

Archiblatta hoevenii, Voll. Tijdschr. Ent. Vol. V, p. 106, pl. VI, figs. 1 and 2 (1862).

Planetica aranea, Saussure. Mém. Soc. Genève, Vol. XVII, p. 166, pl. I, fig. 23 (1863).

Archiblatta hoevenii, Brunner. Syst. Blatt. p. 249, pl. VIII, figs. 39 A-E (1865).

Archiblatta hoevenii, Tepper. Trans. R. Soc. S. Austr. 1894, p 185.

Archiblatta hoevenii, Kirby. Syn. Cat. Orth. Vol. I, p. 148 (1904).

Archiblatta hoevenii, Shelford. Gen. Ins. fasc. 109, p. 22 (1910).

Brunner gives the following description:

Fusco-nigra. Antennis albo-annulatis. Pronoto subtrapezoidali, margine toto incrassato, rugoso. Mas elytrorum areâ marginali angulo recto deflexo, areâ anali longissimâ, venis axillaribus furcatis. Alarum venâ axillari primâ ramulis confertissimis, valde furcatis. Femina aptera; mesonoto et metanoto rugosis, postice productis. Pedibus longissimis, femoribus teretibus, tibiis spinis raris parvis. Abdomine orbiculari, laminâ supra-anali maris quadratâ, angulis rotundatis; feminæ triangulariter productâ. ♂ ♀.

long.	♂	♀
corporis	34 mm.	53 mm.
pronoti	10 mm.	14 mm.
pron. transv.	11 mm.	13 mm.
elytrorum	42 mm.	0 mm.
fem. post.	17 mm.	? mm.
tib. post.	20 mm.	25 mm.
tars. post.	8·5 mm.	10 mm.

Hab: Sumatra (Vollenhoven).—Penang; Singapore; Great Sunda Islands (Shelford).—The Raffles Museum possesses specimens from the Semangko Pass (Selangor—Pahang); Pahang; Gunong Kledang (Perak) and Maxwell's Hill (Perak).—Also collected by Mr. Kloss on Bukit Kutu, Selangor, August 1915.

Genus ***CATARA,*** Walker.

Walker, Cat. Blatt. Brit. Mus. p. 52 (1868).
Shelford, Gen. Ins. fasc. 109, p. 21 (1910).

Male with tegmina and wings fully developed; female entirely apterous. Antennæ slightly incrassated. Pronotum rugose; sub-discoidal, anteriorly truncate in the male; sub-cucullate, posteriorly truncate and with the posterior angles produced in the female. Dorsal surface of female rugose, posterior angles of mesonotum produced. Supra-anal lamina of male sub-transverse; genital styles small. Cerci short, obtuse. Femora almost entirely unarmed. Tibial spines small and few in number, biseriately arranged on the outer aspect of the tibiæ. Tarsi unarmed beneath; posterior metatarsus equal in length to the remaining joints, its pulvillus apical, the remaining pulvilli large. Arolia small.

Catara rugosicollis, Brunner von Wattenwyl. (Plate V, figs. 26 and 27).

Deropeltis rugosicollis, Brunner. Syst. Blatt. p. 245 (1865).
Catara rugicollis, Walker. Cat. Blatt. B. M. p. 53 (1868).
Archiblatta valvularia, Saussure. Mém. Soc. Genève, Vol. XXIII, p. 118, pl. X, fig. 40 (1873).
Catara rugosicollis, Kirby. Syn. Cat. Orth. Vol. I, p. 148 (1904).
Catara rugosicollis, Shelford. Gen. Ins. fasc. 109, p. 22, pl. II, fig. 19 (1910).

♂ piceus. Pronoto transverse-ovato, margine antico truncato, postico medio subemarginato, margine toto limbato, disco concavo, valde rugoso. Elytris longissimis: pedibus longis, tenuissimis. Abdomine suborbiculari. ♂.

Long.	♂
corporis	15 mm.
pronoti	3·7 mm.
pron. transv.	5 mm.
elytrorum	22 mm.

Hab: Singapore; Borneo; Java (Kirby).—The Raffles Museum possesses specimens from the Semangko Pass (Selangor) ♂; Bukit Kutu. (Selangor) ♂; Mount Poe (Sarawak). ♂ and ♀; Tjibodas (Java) ♂.—Messrs. Robinson and Kloss collected ♂ and ♀ on Sungei Kumbang, 4600′, Korinchi Hill Country, Sumatra, April 1914.—The Rev. G. Dexter Allen collected several specimens, ♂ and ♀. at Banting, Sarawak.

Catara minor, Krauss.

Catara minor, Krauss. Semon. Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 753, pl. LXVII, fig. 3 (1903).

Catara minor, Shelford. Gen. Ins. fasc. 109, p. 22 (1910).

Statura parva. Rufo-castanea. nitida, alata (♂), vel nigra coriacea, subopaca, aptera (♀). Caput impresso-punctatum, pilis rufis sparsim obsitum, fronte supra clypeum rugulosa, in ♂ inter antennas foveolis duabus, carina mediana sejunctis instructa, ocellis ochroleucis. Labrum rufo-badium. Antennæ corpore breviores, nigro-fuscæ, annulis duobus pallidis, uno lato ante medium, altero angusto apicem versus posito, cinctæ. Pronotum in ♂ transverse ovale, antice truncatum, postice rotundatum, in medio marginis postici triangulariter excisum, supra valde iniquum, impresso-punctatum, nitidum, carinula longitudinali pone medium instructum, parte mediana convexa, tuberculata, parte laterali late excavata, margine antico incrassato-elevato, margine laterali elevato, margine postico parum elevato; in ♀ subtrapezoideum, antice truncatum, postice rotundatum, in medio marginis postici levissime emarginatum, utrinque sinuatum, angulis posticis in spinam longam, obtusam productis, supra iniquum, profunde impresso-punctatum, coriaceum, parte mediana convexa, carimula longitudinali mediana antrorsum obsolescente et rugulis duabus huic adjacentibus, sub angulo curvatis, figuram × imitantibus instructa, parte laterali concava, margine antico incrassato-elevato, margine laterali elevato, margine postico plano. Meso—et metanotum ♀ coriacea, impresso-punctata, carina longitudinali mediana rugulisque nonnullis longitudinalibus lateralibus instructa, angulis posticis in spinam longam obtusiusculam productis, mesonotum postice rotundatum, in medio marginis posticis subexcisum, metanotum postice in medio angulariter sub-productum. Elytra alaeque ♂ corpore subduplo longiores. Elytra rufo-castanea, tenuiter

membranacea, semipellucida, distincte venosa, apicem versus sensim dilatata, apice ipso rotundata. Alæ semipellucidæ, parte antica rufo-fusca, parte postica grisescente, fusco-venosa. Pedes nigro-castanei (♂) vel nigri (♀), rufo-spinosi, articulo tarsorum ultimo fulvescente. Abdomen ♂ læve, nitidum, supra fulvescens, retrorsum castaneum, infra rufo-castaneum ♀ supra coriaceum, subopacum, insculpto-punctatum, tuberculis parum elevatis et in margine postico tergitorum granulis obsitum, infra nitidum, subtilissime punctatum. Tergitum septimum postice utrinque profunde sinuatum et lobulo obtuso laterali instructum, parte mediana porrecta, rotundata, subemarginata. Lamina supra-analis ♂ postice rotundata, in medio levissime excisa, carinula longitudinali mediana antrorsum incrassata instructa, ♀ a tergito septimo fere obtecta. Cerci lanceolati, breviuseuli, apice fulvescentes. Lamina sub-genitalis ♂ postice rotundata, utrinque levissime emarginata et stylis brevibus instructa.

	♂	♀
Longitudo corporis	16 mm.	18 mm.
„ pronoti	4 mm.	5 mm.
Latitudo „	6 mm.	8 mm.
Longitudo elytrorum	23 mm.	——

Hab: Tjibodas (Java).

Krauss adds: Unterscheidet sich von *C. rugicollis* Wlk. aus Borneo (Sarawak), der sie sehr nahe steht, durch geringere Grösse und die am Hinterrand nur leicht granulirten, aber nicht mit Stacheln versehenen Tergite des ♀ Abdomens.

Interessant ist, dass die ♂ Nymphen (14 mm Länge) bezüglich der Sculptur der Körperoberfläche sowie der Form und Bestachelung des Pronotums vollkommen mit dem ♀ übereinstimmen. Die an Stelle der Stacheln des Meso—und Metanotums sitzenden Flügelscheiden sind lang und glatt.

Das von Semon mitgebrachte ♀ trägt eine Eierkapsel schon ausserhalb des Abdomens, jedoch in einer taschenförmigen, zarthäutigen Ausstülpung der Vagina zwischen den beiden Seitenklappen derselben befestigt, wobei die obere Hälfte der Kapsel schon vollständig frei und unbedeckt ist, während die untere Hälfte noch von der Tasche umschlossen ist. Die Kapsel selbst ist 5 mm. lang, eiförmig, von der Seite leicht zusammengedrückt und trägt an ihrer oberen Seite einen hohen Kamm, der von der Lamina supra-analis grösstentheils bedeckt ist. Am freien (oberen) Ende läuft der Kamm in einen feinen Mittelkiel aus, der sich in 2 kurze Arme gabelt. Im Uebrigen erscheint die gleichmässig braunrothe Kapsel glatt und ohne Sculptur.

Sub-family 6. PANCHLORINAE.

Brunner, Système des Blattaires, p. 226.

Capite crassiusculo, a pronoto subobtecto, in nonnullis generibus

toto obtecto. Pronoto postice angulato, vel truncato, plano vel cucullato. Elytris perfecte explicatis (exceptis feminis generis *Oniscosomæ**), venâ anali impressâ, venis axillaribus confertissimis. Alis parte anticâ rotundatâ, venâ inframediâ pectinatâ, campo apicali nullo, campo anali flabellatim plicato. Femoribus inermibus; tarsis arolio instructis. Abdomine depresso, segmentis dorsalibus angulis posticis acutis, segmenta ventralia excedentibus. Laminâ supra-anali utriusque sexus quadratâ, vel incisâ, vel integrâ.

Key to the Malayan Genera of the Panchlorinæ.

Pronotum posteriorly with 5 obtuse angles	*Rhyparobia*, Krauss.
Pronotum posteriorly with 1 obtuse angle	*Leucophaea*, Brunner.
Pronotum posteriorly truncated	*Nauphoeta*, Burmeister.

Genus ***RHYPAROBIA,*** Krauss.

Krauss. Zool. Anzeiger, Vol. XV, p. 165 (1892).
Saussure and Zehntner. Biol. Centr. Amer., Orth. Vol. I, p. 89 (1893).

Gen. nov. inter *Gynam*, Brunner, et *Panchloram*, Burmeister, collocandum, pronoto latissimo, subplano, antice rotundato, postice angulis quinque obtusis instructo discoque ejus maculato insigne.

Rhyparobia maderae, Fabricius.

Blatta maderae, Fabr. Spec. Ins. Vol. I, p. 341. n. 2 (1781).
Blatta maderae, Stoll. Spectres, Blatt. p. 4, pl. I*d*, fig. 7 (1813).
Blatta maderae, Brullé. Hist. Nat. Ins. Vol. IX, p. 19, pl. III, fig. 1 (1835).
Blatta maderae, Hahn. Icon. Orth., Blatt. pl. A, fig. 1 (1836).
Panchlora maderae, Burmeister. Hand. Ent. Vol. II, p. 507 (1838).
Blatta maderae, Serville. Ins. Orth. p. 87 (1839).
Panchlora maderae, Saussure. Mém. Mex. Blatt. p. 202 (1864).
Panchlora maderae, Brunner. Syst. Blatt. p. 282 (1865).
Rhyparobia maderae, Krauss. Zool. Anz. Vol. XV, p. 165 (1892).
Rhyparobia maderae, Kirby. Syn. Cat. Orth. Vol. I, p. 150 (1904).

Blatta fusca, thorace elytrisque lividis fusco variegatis. Statura omnino *B. gigantea*, at paullo minor. Caput olivaceum antennis fuscis. Thoracis clypeus transversus lividus punctis nigris maculatus. Elytra livida sulcis duobus impressis, altero recto, altero arcuato, apice lineolis fuscis creberrimis variegata. Corpus olivaceo fuscum.—Madeira.

Brunner's description of this species is as follows:

Fusco-testacea. Antennis corporis longitudine, fuscis. Pronoto postice parum producto, plano, nigro—maculato. Elytris areâ mediastinâ latâ, pallidâ, disco fusco-testaceo, circa venam scapularem et in apice venulis transversis fusco-fasciatis, venâ anali totâ atque venâ scapulari basi nigris. ♂ ♀.

---

* An Australian genus.

long.	♂	♀
corporis	34-37 mm.	39 mm.
pronoti	8·5 mm.	9·5 mm.
pron. transv.	13 mm.	14 mm.
elytrorum	33-35 mm.	38 mm.

Hab: Cosmopolitan.—Brunner gives the following localities: Madeira; Senegal; S. America; Java (Vienna Museum); Philippines (Vienna Museum), etc.

Genus ***LEUCOPHAEA,*** Brunner von Wattenwyl.

(Subgenus of *Panchlora,* Burmeister).

Brunner. Système des Blattaires, pp. 270 and 272 (1865).

Antennis setaceis, dimidium corpus non attingentibus (exceptâ *L. maderæ*, Fab.). Pronoti margine antico semicirculari, caput fere totum obtegente, postico triangulo obtuso supra scutellum producto. Elytris linearibus, membranaceis, subpellucidis, venâ mediastinâ rectâ. Pedibus gracilibus, femoribus lævibus. Abdomine marium parum dilatato: segmentis dorsalibus 8, laminâ supra-anali marium quadratâ, feminarum subtriangulari, medio plicatâ. Cercis depressis, laminam supra-analem vix superantibus, parum pilosis. Color fuscus vel testaceus.

Leucophaea surinamensis, Limné.* (Plate II, figs 7 and 8).

Blatta surinamensis, **L. Syst. Nat. (ed. X), Vol. I, p. 424 (1758).**

Panchlora surinamensis, Burmeister. Handb. Ent. Vol. II, p. 507 (1838).

Panchlora indica, Burmeister. ibid. p. 507 (1838).

Blatta corticum, **Serville. Ins. Orth. p. 90 (1839).**

Panchlora surinamensis, Saussure. Mém. Mex. Blatt. p. 188 (1364).

Panchlora surinamensis, Brunner. Syst. Blatt. p. 278, pl. VII, fig. 32 (1865).

Panchlora celebesa, Walker. Cat. Blatt. B. M. p. 26 (1868).

Panchlora submarginata, Walker. Cat. Blatt. Suppl. p. 7 (1871).

Panchlora occipitalis, Walker. Cat. Blatt. Suppl. p. 7 (1871).

Leucophaea surinamensis, Burr. Brit. Orth. p. 28, pl. II*a* fig. 1 (1897).

Leucophaea surinamensis, Krauss. Semon. Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 747 (1903).

Leucophaea surinamensis, Kirby. Syn. Cat. Orth. Vol. I, p. 151 (1904).

Pycnoscelus surinamensis, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 558 (1904); Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).

Brunner's description is as follows:

Testaceo-fusca. Capite nigro, punctis duobus flavis, ocelliformibus. Pronoto nigro, antice testaceo—marginato. Elytris apice rotundatis, abdomine longioribus vel ejus longitudine, fusco-testaceis, areâ marginali pallide-testaceâ, nigro-limbatâ atque lineâ nigrâ internâ appositâ. Alarum parte

* For a complete list of literature and synonyms see Kirby, Syn. Cat. Orth. Vol. I, p. 15 (1904).

anticâ fuscâ. Abdomine castaneo, interdum supra testaceo-marginato. Laminâ supra-anali feminæ obtuso-triangulari, fusca. ♂ ♀.

Long.	♂	♀
corporis	14 mm.	14·5-18 mm.
pronoti	4·5 mm.	4·2-5 mm.
pron. transv.	6 mm.	6-7 mm.
elytrorum	16 mm.	10-18 mm.

Hab: Cosmopolitan.—Brunner gives the following localities: Brazil, Mexico, Senegal, Amoy, Java, Philippines.—Sumatra (Rehn).—Trang, Lower Siam (Rehn).—Buitenzorg, Java (Krauss). The Raffles Museum contains specimens from Singapore, Penang and Bukit Kutu, Selangor.—Also collected by Messrs. Robinson and Kloss in the Korinchi Valley, Sumatra, and by the Rev. G. Dexter Allen at Banting, Sarawak.

Leucophaea striata, Kirby.

Leucophaea striata, Kirby. A. M. N. H. (7), Vol. XII, p. 378 (1903).—Syn. Cat. Orth. Vol. I, p. 151 (1904).

Head free, light red above, black below, except a space under each eye and the parts below the labrum, which are pale yellow. Antennæ ferruginous, pale yellow at the base. Pronotum smooth, shining, sparingly punctured, more or less blackish in the middle; the front and depressed sides red; front transversely striated. Abdomen orange-tawny, paler below, with a row of four linear spots on each side. Tegmina reddish tawny towards the base, and yellowish towards the costa beyond the costal cell and towards the apex of the left tegmen; outer half of right tegmen obliquely, and wings clear hyaline; outer half of costa of wings yellowish tawny.

Exp. al. 35-43 mm; long. corp. 20-25 mm. Allied to *L. tenebrigera,* Walk., from India.

Hab: Selangor, near Caves (H. N. Ridley).

Leucophaea nigra, Brunner.

Panchlora nigra, Brunner. Syst. Blatt. p. 280 (1865).
Leucophaea nigra, Kirby. Syn. Cat. Orth. Vol. I, p. 151 (1904).
Pycnoscelus niger, Rehn. Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).

Pronoto margine antico tenuissime rufo-limbata. Elytris unicoloribus, nigerrimis, abdomen multo superantibus. Alis fuscis. Pedibus castaneis. Abdomine nigro. ♀.

long.	♀
corporis	18·5 mm.
pronoti	5·5 mm.
pron. transv.	17 mm.
elytrorum	18 mm.

Hab: Burma (Brunner).—Sumatra (Rehn).—Java (Oxford Museum).

Genus ***NAUPHOETA,*** Burmeister.

Burmeister. Handb. d. Entom. Vol. II, p. 508 (1839).
Brunner. Système des Blattaires, p. 283 (1865).

Antennis setaceis, corpore paulo brevioribus. Pronoto antice and postice truncato, vel parum rotundato, latere valde deflexo, angulis posticis obtusis. Abdomine marium atque feminarum parum dilatato, illo segmentis 9 dorsalibus. Laminâ supra-anali marium quadratâ, angulis obtusis, medio impressâ; feminarum transversâ, angulis rotundatis, medio emarginatâ et plicatâ. Cercis lævibus, laminam supra-analem non superantibus.

Nauphoeta cinerea, Olivier. (Plate II, fig. 9).

Blatta cinerea, Oliv. Enc. Méth., Ins. Vol. IV, p. 314 (1789).
Nauphoeta grisea, Burmeister. Handb. Ent. Vol. II, p. 508 (1838).
Nauphoeta bivittata, Burmeister. Handb. Ent. Vol. II, p. 508 (1838).
Blatta cinerea, Serville. Ins. Orth. p. 89 (1839).
Nauphoeta cinerea, Saussure. Mém. Mex. Blatt, p. 204 (1864); Miss. Mex. Orth. p. 104 (1870); Abh. Senekenb. Ges. Vol. XXI, p. 583 (1899).
Epilampra cinerea, Brunner. Syst. Blatt. p. 182 (1865).
Nauphoeta grisea, Brunner. Syst. Blatt. p. 287 (1865).
Nauphoeta bivittata, Brunner. Syst. Blatt. p. 287 (1865).
Nauphoeta cinerea, Sauss. and Zehnt. Grandidier, Hist. Madagascar, Orth. Vol. I, p. 81, pl. III, fig. 31 (1895).
Nauphoeta cinerea, Kirby. Syn. Cat. Orth. Vol. I, p. 156 (1904).

Brunner's description of his *Epilampra cinerea* is as follows:

Cinerea, livida. Capite flavo, fronte ferrugineo-et nigro-fasciatâ. Prenoti disco ferrugineo-maculato, vittis lateralibus, longitudinalibus, nigris. Elytris corporis longitudine. Vittâ humerali fuscâ, elevatâ usque ad apicem elytrorum productâ. Venâ anali fuscâ, impressâ. ♂ ♀.

Long. corporis 23-27 mm.

Hab: Ile de France (Brunner).—Kirby gives the following distribution: Mauritius, Madagascar, Sumatra, Philippines, Polynesia, S. America, Central America, Cuba.—Raffles Museum contains several specimens from Singapore.

Sub-family 7. BLABERINAE.

None.

Sub-family 8. CORYDINAE.

(N.B. Brunner von Wattenwyl's original definition of the Corydinæ is here enlarged so as to include the Heterogaminæ. See his 'Nouveau Système,' p. 334 and p. 350, and his 'Revision,' p. 38).

Capite globoso. Pronoto lato, transverso vel parvo, quadrato, piloso vel ciliato. Elytris marium perfecte explicatis, femiarum explicatis vel absentibus. Alis marium et feminarum rudimentariis, vel perfecte explicatis, vel elytris longioribus. Alis campo anali nequaquam flabellatim plicato. Femoribus inermibus. Tarsis marium arolio instructis, feminarum instructis vel nullis. Abdominis segmentis medio constrictis. Laminâ supra-anali rotundatâ vel incisâ vel plicatâ. Laminâ subgenitali marium stylis instructâ.

Key to the Malayan Genera of the Corydinæ.

(Partly after Brunner, Syst. Blatt., pp. 49-50).

1. Lamina supra-analis feminae rotundata.
   2. Tegmina tota coriacea. *Corydia*, Serville.
   2¹. Tegmina vel partim, vel tota membranacea.
      3. Tegmina apice membranacea.
         4. Alae leviter venosae. *Holocompsa*, Burmeister.
         4¹. Alae fortiter venosae. *Dyscologamia*, Saussure.
      3¹. Tegmina tota membranaeea. *Homopteroides*, Shelford.

1¹. Lamina supra-analis feminae quadrata, medio incisa.
Polyphaga, Brullé (= *Heterogamia*, Burmeister).

Genus ***CORYDIA***, Serville.

Serville. Ann. Sci. Nat. Vol. XXII, p. 42 (1831).
Brunner, Syst. Blatt. p. 335 (1865).

Antennis moniliformibus, medio inerassatis. Capito toto obtecto. Ocellis valde distinctis. Pronoto transverse-elliptico. hirsuto et ciliato. Elytris coriaceis, dense pilosis, distincte incumbentibus. venis non perspicuis. Pedibus gracilibus. femoribus inermibus. pilosis; tibiis anticis brevissimis. Abdomine utriusque sexus plerumque orbiculari, segmentis omnibus medio contractis. Laminâ supra-anali marium transversâ, truncatâ, ciliatâ; feminarum rotundatâ. Cercis moniliformibus, pilosis. Laminâ subgenitali marium rotundatâ incurvâ, stylis longis instructâ.

Corydia petiveriana, Linné.

Cassida petiveriana, L. Syst. Nat. (ed. X), Vol. I, p. 364 (1758).
Cassida 7-guttata, L. Syst. Nat. (ed. XII), Vol. I (2), p. 577 (1767).
Blatta heteroclyta, Pallas. Spicil. Zool. Vol. IX, pl. I, fig. 5 (1772).
Blatta heteroclyta, Sulzer. Gesch. Ins. pl. XI, figs. A, B (1776).
Blatta petiveriana, Herbst. Fuessly, Arch. Ins. p. 185, pl. XLIX. fig. 7 (1786).
Blatta petiveriana, Beauv. Ins. Afr. Amér. p. 227, Orth. pl. IIc. fig. 1 (1805).
Blatta petiveriana, Stoll. Spectres, Blatt. p. 7, pl. V, figs. 21, 22 (1813).
Corydia petiveriana, Burmeister. Handb. Ent. Vol. II, p. 491 (1838).
Corydia petiveriana, Serville. Ins. Orth. p. 123 (1839).
Corydia petiveriana, Brunner. Syst. Blatt. p. 336, pl. X, figs. 47 A, B (1865).
Corydia petiveriana, Kirby. Syn. Cat. Orth. Vol. I, p. 166 (1904).

Brunner's description is as follows:

Nigra, orbicularis. Pronoti lenticulari. Elytris maculis septem albis. Margine obtecto elytri dextri atque alis et abdominis margine laterali aurantiacis. ♂ ♀

Long.	♂	♀
corporis	16 mm.	25 mm.
pronoti	6·5 mm.	8 mm.
pron. transv.	12 mm.	14 mm.
elytrorum	16 mm.	18 mm.

Hab: 'Indes orientales' (Brunner).—Madras and Ceylon (Oxford Museum).—It is doubtful as to whether this species occurs within the Malayan region.

Corydia coerulea, Shelford.

Corydia coerulea, Shelf. T. E. S. 1906, pp. 272-3.

♂. Brilliant blue with metallic reflections. Head, pronotum and anterior margins of tegmina and wings pubescent, antennæ fuscous, moniliform. Pronotum transversely elliptic, punctate with two deep impressions on the disc, humeral angles well marked. Tegmina blue, with purplish reflections and some obscure orange maculæ on the disc, an orange streak on the margin of the tegmen just beyond the mediastinal field: the right tegmen where covered by the left reddish-purple. Wings hyaline, marginal field infuscated, with purplish reflections, four bifurcated costal veins, ulnar vein with seven rami. Meso—and metanotum purple. Abdomen orange, the last two segments blue. Supra-anal lamina transverse, widely emarginate, sub-genital lamina quadrate with acuminate and pubescent styles. Cerci stout, fuscous. Legs dark blue, tarsi fuscous.

Total length, 13·5 mm., length of tegmina 10 mm.

Hab: Mt. Matang, 3,000′ Sarawak (Shelford coll.). One example

Shelford adds: The species appears to be most closely allied to *C. dasytoides* Wlk.

Corydia forceps, n. sp. (Plate VII, fig. 41).

♂. Entirely hirsute. Head shining pitch black. Eyes light brown. Antennæ black, except for a narrow white ring about one third of the total length from the apex. Pronotum metallic greenish blue. Tegmina metallic greenish blue, with a silvery marking roughly in the shape of the figure 8 with a double head (or with a fanciful resemblance to a forceps); with a small orange patch on the outer edge of either tegmen. Abdomen bluish black, shining, with an orange patch at its outer edge, just below the similar patch on the tegmina. Legs shining black. Cerci black.

total length	♂	13	mm.
length of pronotum		4	mm.
width of pronotum		5·5	mm.
length of tegmina		10	mm.

Hab: Bukit Kutu, Selangor, 3,000′ (April 1915). One example. Type in Raffles Museum.

This species appears to be closely allied to *Corydia* (*Euthyrrhapha*) *dasyloides*, Walker,* from Amoy, and to *Corydia cærulea*, Shelford, from Sarawak. The three species are distinguished by their metallic blue colour, and the orange patch on the tegmina.

Corydia maxwelli, n. sp. (Plate II, fig. 10).

♂. Entirely hirsute. Head orange. Eyes black. Antennæ moniliform, black, with a narrow white subapical ring. Pronotum black. Tegmina orange, with a round black spot in the centre of each, and with black tips. Abdomen orange. Coxæ and femora orange, tibiæ and tarsi black. Cerci black.

Total length	♂	11	mm.
length of pronotum		3	mm.
width of pronotum		4·5	mm.
length of tegmina		8	mm.

Hab: Maxwell's Hill, Perak, 2,150′, where I collected one example in April 1904.—The Rev. G. Dexter Allen has kindly submitted to me a specimen of the same species, ♂ too, which he had obtained on Lingga Mt., Sarawak, 3,000′, in June 1914. It entirely agrees with the specimen described above, except that it is very slightly larger (total length 12 mm. against 11 mm.), and that it is of a somewhat darker orange colour.

In April last I obtained on Bukit Kutu, Selangor, two specimens, both ♀, which may belong to the same species, though, of course, further material obtained may prove them to be the types of a new species. Their characters are as follows:

♀. Entirely hirsute. Head shining pitch black. Eyes black. Antennæ moniliform, black, with a narrow white subapical ring. Pronotum black. Tegmina orange, with a roundish black spot in the centre of each which is confluent with a black line on the outer anterior margin of the tegmen. Tip of the tegmina black. Abdomen shining black, with the outer edge dark orange. Legs entirely black. Cerci black.

Total length	♀	11	mm.
length of pronotum		3·5	mm.
width of pronotum		5	mm.
length of tegmina		8	mm.

* See Walker, Catalogue of the Blattariae, p. 191 (1868).

Hab: Bukit Kutu, Selangor, 3,000′ (April 1915). Two examples.

I have much pleasure in naming this small, but strikingly coloured species after Mr. W. G. Maxwell, C. M. G., which will at the same time remind of the locality in which the first specimen was obtained.

Genus ***HOMOPTEROIDEA,*** Shelford.

Shelford. Trans. Entom. Soc. London, 1906, p. 274.

Head as in *Latindia*, Stål,* antennæ elongate. Pronotum elliptic, sides not deflexed, with arcuate sulci, with a sparse erect pubescence. Tegmina membranous, slightly exceeding the abdomen in length, or much longer, venation irregular, apical part of discoidal area reticulate, no oblique vein. Wings as long as tegmina in both sexes. Supra-anal lamina produced, triangular, sub-genital lamina in the female deeply cleft. Cerci elongate. Femora unarmed beneath; tibiæ sparsely spined, spines in two rows; tarsi without arolia.

Homopteroidea nigra, Shelford.

Homopteroidea nigra, Shelf. T. E. S. 1906, pp. 274-5, pl. XVI, figs. 13, 14.

♀. Head black, antennæ fuscous, clypeus with an erect pubescence. Pronotum almost orbicular, margined all round, a few erect hairs on the anterior and lateral margins, disc irregular with two converging sulci posteriorly, black, lateral margins dark castaneous. Tegmina castaneous, radial vein giving off four costal veins, three longitudinal sectors in discoidal field, apex of tegmina reticulate, anal vein angled, axillary veins reduced, reticulated. Wings infuscated, four costal veins, ulnar vein tri-ramose, apex of wing reticulated. Abdomen fusco-castaneous, supra-anal lamina large, produced, margin slightly reflected, emarginate in the middle and with a stiff erect pubescence, sub-genital smaller than the supra-anal lamina, compressed laterally and deeply cleft. Cerci mutilated. Legs fusco-castaneous, tarsi paler, front femora with apical spine on anterior border beneath, no genicular spine, mid-femora with two apical spines and a genicular spine, hind femora missing, tarsi without arolia.

Length of body 7 mm., length of tegmina 3 mm.

Hab: Kuching, Sarawak. One example [No. 26]. An example of this species from Sumatra is in the Paris Museum.

Genus ***HOLOCOMPSA,*** Burmeister.

Burmeister. Handb. d. Entom. p. 491 (1838).

Brunner. Syst. Blatt. p. 346 (1865).

Antennis filiformibus. Pronoto antice rotundato, piloso.

---

* Brunner (Syst. Blatt. p. 344) says of *Latindia*, Stal, "Capite globoso, oculis parvis, valde remotis" and "la tête est globuleuse, le front s'avancant beaucoup entre les petits yeux."

Elytris basi obscuris, apice membranaceis et pellucidis. Alis hyalinis, venis raris.

Holocompsa debilis, Walker.

Holocompsa debilis, Walk. Cat. Blatt. B. M. p. 192 (1868).
Holocompsa debilis, Kirby. Syn. Cat. Orth. Vol. I, p. 170 (1904).

♂. Nigra, ovata, sat plana, subtus picea; caput prothoracem vix superans; prothorax tomentosus, lateribus pilosis; pedes lividi; alæ anticæ æneo nitentes, basi costaque nigris, fascia antemedia albida; alæ posticæ nigricantes, macula magna diaphana.

♂. Black, oval, rather flat, piceous beneath. Head hardly extending beyond the prothorax. Eyes wide apart. Prothorax with cinereous tomentum, slightly shining; sides rounded, pilose; fore border truncated; hind border straight. Legs livid, short, stout; tibiæ with long slender spines. Wings extending much beyond the abdomen. Fore wings aneous and membranous, except at the base and along much more than half the length of the costa; a whitish antemedial band. Hind wings blackish, with a large pellucid spot in the disk. Length of the body 2 lines (= 4·2 mm.); of the wings 5 lines (= 10·5 mm.).

Hab: Sarawak, Borneo. In Mr. Saunders' collection.

Genus ***POLYPHAGA,*** Brullé.*

Brullé. Hist. Nat. Ins. Vol. IX, p. 57 (1835).
Saussure. Mém. Hist. Nat. Mexique, p. 220 (1864).

Tête assez petite, entièrement cachée sous le prothorax. Antennes moins longues que le corps. Chaperon très-distinct, sa partie supérieure renflée en un gros bourrelet transversal. Thorax ayant ses bords ciliés; prothorax ne formant pas de capuchon. Pattes longues et grêles chez les mâles, l'étant moins chez les femelles, à épines fines; tibias antérieurs très-courts; le premier article des tarses aussi long ou même plus long que les suivants pris ensemble. Les deux sexes offrant des formes très-différents: les mâles complétement ailés; les femelles complétement aptères ou incomplétement ailées. Chez les individus ailés le prothorax et les élytres sont entièrement poilus et les ocelles distinct.

Polyphaga sumatrensis, Shelford.

Polyphaga sumatrensis, Shelf. Jahrb. Ver. Nat. Wiesbaden, p. 33 (1908).

♂. Pale testaceous. Frons and vertex castaneous; eyes and ocelli equally far apart. Pronotum barely covering vertex of head, rufo-fimbriate and pubescent, disc rather darker than margins. Tegmina with a few obscure fuscous maculæ, medi-

* According to Brunner (Syst. Blatt. p. 351) synonymous with *Heterogamia,* Burmeister.

astinal vein laminated beneath, anal vein rounded. Ulnar vein of wings not flexuose at base. Supra-anal lamina narrow, apex slightly emarginate; sub-genital lamina slightly asymmetrical, its margin thickened and fimbriate, styles minute. Posterior metatarsus rather longer than remaining joints; calcar of posterior tibia equal to half the length of the metatarsus. Total length 21·5 mm; length of body 15 mm; length of tegmina 18·5 mm; pronotum 4 × 6 mm.

Hab: Palembang, Sumatra.

Genus ***DYSCOLOGAMIA***, Saussure.

Saussure, Rev. Suisse Zool. Vol. I (1893), p. 297.

Les deux sexes ailés. Femelles de formes à peu près identiques à celles des *Homœogamia*, mais avec le bord postérieur du pronotum souvent un peu sinué de chaque côté. Tibias tous armés de 6 épines apicales. Tibias antérieurs assez longs, portant, outre le verticille apical 3 épines. Tibias intermédiaires offrant: *en dessus* 2: 2: 3; en dessous 1: 2 épines. Tibias postérieurs offrant *en dessus* 4: 3: 4, *en dessous* 2: 3 épines (sauf les différences occasionelles ou individuelles). Tarses en dessous garnis de petites pelottes. Métatarses postérieurs assez plats et en dessous irrégulièrement spinuleux. Elytres ayant la veine médiastine saillante en dessous en forme de lame.

♀ ♀. Yeux plus rapprochés entre eux que les ocelles. Pattes assez grêles.

Plaque suranale un peu saillante, ayant son bord postérieur arqué et échancré: cerci visibles en dessus entre la plaque suranale et les angles du 6ᵉ segment, le 7ᵉ étant raccourci sur les côtés.

Dernier segment ventral ayant son bord postérieur arqué et bisinué. Le 7ᵉ segment dorsal de l'abdomen presque complet mais raccourci sur les côtés. Angles des segments mousses, un peu étagés.—Segment médiaire grand.—Mésonotum ayant son bord postérieur arqué.

♂ ♂. Plaque suranale transversale, échancrée, subbilobée. Elytres roux-marron, en général ornés de taches jaune-pâle, ponctués à leur base; leur bord costal un peu arqué. Tarses munis entre les griffes d'un arolium distinct.

Dyscologamia capucina, Brunner von Wattenwyl.

Homocogamia capucina, Brunner. Ann. Mus. Genova (2), Vol. XIII, p. 39, pl. I, fig. 17 a, b (1893).

Dyscologamia capucina, Saussure. Rev. Suisse Zool. Vol. I, p. 301 (1893).

Dyscologamia capucina, Kirby. Syn. Cat. Orth. Vol. I, p. 174 (1904).

♂. Fusco-testaceus, superficie tota fusco-hirsuta. Caput nigrum, oculis valde approximatis. Antennæ fuscæ. Pronotum unicolor fuscum, angulis lateralibus margine antico

magis approximatis quam margini postico, margine postico subtruncato. Elytra fusca, opaca, maculis pallidis duabus in tertia parte basali ornata, venis omnibus versus apicem elytri tendentibus. Alæ leviter infumatæ, campo mediastino pallido. Pedes fusci. Abdomen fuscum. Lamina supra-analis transversa, emarginata, lobis rotundatis. Lamina sub-genitalis utrinque stylo instructa.

♀. Unicolor fusca, dense hirsuta. Caput nigrum. Oculi remoti. Pronotum semiorbiculare, angulis acutis, margine postico recto. Elytra coriacea, subacuminata, unicoloria fusca, veins obsoletis. Alæ abbreviatæ. Lamina supra-analis rotundata, leviter emarginata.

long. corporis	♂ 18	mm.	♀ 21	mm.
,, pronoti	5·8	mm.	7·8	mm.
lat. pronoti	9·5	mm.	14·5	mm.
long. elytrorum	24·5	mm.	20·8	mm.

Hab: Carin Chebà; Mt. Mooleyit, Tenasserim, 1200-1400 m. (Brunner.)—The Oxford Museum contains a specimen labelled 'N. Borneo, opposite Labuan.'

Dyscologamia cesticulata, Saussure, (Plate VI, fig. 30).

Dyscologamia cesticulata, Sauss. Rev. Suisse Zool. Vol. I, p. 298 (1893).

Dyscologamia cesticulata, Kirby, A. M. N. H. (7), Vol. XI, p. 406 (1903); Syn. Cat. Orth. Vol. I, p. 173 (1904).

Dyscologamia cesticulata, Rehn. Proc. U. S. Nat. Mus., Vol. XXVII, p. 558 (1904).

♀. Fusco-nigra vel fusco-castanea, rufo-pilosella; pronoto, elytris et abdominis marginibus rufo-fimbriatis.—Antennæ rufo-fuscæ.—Caput nigrum, punctatum. Frons punctis impressis 3 contiguis, intermedio semiorbiculari inferius aperto. Facies infra illos plana. Clypeus vix convexus, infere flavo-marginatus, ore rufo.—Pronotum late semiorbiculare, confertissime granulatum, in medio convexiusculum; margine anteriore ad inferum deflexo, supra crasse rotundato, cesticulum rotundatum in medio interruptum, efficiente. Superficies supero utrinque inter illum et discum medium profunde impressa ac crasse granulata. Margo posterior arcuatus, utrinque ad angulos sinuatus; anguli hocpropter retro-producti, apice rotundati.—Scutellum mesonoti granulatum.—Elytra abdomen tegentia vel leviter superantia, cornea, punctata, obsolete venosa, apice attenuata, rotundato-acuminata, sulco anali nullo. Margo costalis, in parte proximali (in modo pronoti) crasse rotundato-reflexus et elevato-marginatus.—Alæ abdominis apicem fere attingentes, diaphano-ferrugineæ vel nebulosæ, costa ferruginea, apice anguste rotundatæ.—Abdomen supra basi testaceum, politum, subtus fuscum, subtiliter squamoso-pilosellum; ejus margines laterales haud serrati; segmento ultimo angulo posteriore rotundato. Lamina supraanalis margine fere toto

arcuato, in medio distincte incisa ac sulcata. Ultimum segmentum ventrale in medio rotundato-tumidum; margine postico in medio producto, fere parabolice rotundato, utrinque late sinuato, laminam supraanalem superans. Cerci acuminati, distincte 8-articulati.—Pedes graciles, rufo-fusci, punctulati, rufo-pilosi, metatarsis valde pilosis. Tarsi subtus pulvillis parum prominulis vel obsoletis instructi.

Long. 25; elytr. 17·6; pronot. 8·8; latit. Pronoti, 14·25 mm.

Hab: Singapore (Mus. Calcuttæ).

We add Kirby's description of a ♂ specimen from Selangor:

♂. Long. corp. 21 millim.; exp. al. 54 millim. Head reddish brown, paler below, eyes contiguous, ocelli conspicuously yellow, and antennal pits yellow; antennæ, scape, and second joint yellow, the former with a broad black ring; the greater part of the flagellum brown, shading into pale reddish towards the extremity; pronotum thickly punctured, chestnut-brown varied with reddish, and clothed with long coarse reddish hair, transversely oval, with the sides rounded off; the rest of the upper surface of the body and the under surface and legs reddish; tegmina chestnut, the left paler towards the extremity, the costa bordered towards the base by an ill-defined blackish line, anal furrow marked by a slender pale yellow line, and intersecting a large irregular pale yellow blotch on the inner margin; just before the curve of the furrow is a small black dash beneath it; the right tegmen almost bisected by an oblique brown line running towards the tip, which it does not reach; within this the tegmen is chestnut like the other, but outside it is subhyaline, darkest towards the line, and the cross-nervures towards the margin narrowly bordered on each side with white; the narrow anal furrow on crossing the transverse line is lost in a large triangular hyaline spot on the inner margin. Wings brownish hyaline, darkest towards the tips, the costa clouded with brown and rust-colour beyond the middle; most of the transverse nervures narrowly bordered with whitish. Supra-anal plate rounded, slightly incised in the middle; cerci rather long, moniliform.—Selangor.

Hab: Singapore (Saussure).—Selangor (Kirby).—Trang, Lower Siam (Rehn).—The Oxford Museum contains specimens from N. W. Borneo and Malacca.—The specimen figured is from Sarawak.

Dyscologamia pilosa, Walker.

Zetobora pilosa, Walk. Cat. Blatt. B. M. p. 187 (1868).
Dyscologamia pilosa, Kirby, Syn. Cat. Orth. Vol. I, p. 174 (1904).

♂. Ferruginea, lata, elliptica; caput nigrum, maculis duabus frontalibus margineque antico albidis; oculi invicem approximati; antennæ fulvæ; prothorax ellipticus, pilosus,

dense punctatus, caput perparum superans, margine antico fornicato, margine postico subrotundato; abdomen fulvum, apice subtusque piceum, lamina supra-anali incisa; pedes robusti, pilosi; alæ anticæ fuscæ, abdomen longe superantes, basi rufo-fuscæ obscuriores; alæ posticæ cinereæ, apud costam fuscescentes.

♂. Ferruginous, broad, elliptical, shining. Head black, smooth; a spot on each side of the front, sockets of the antennæ and fore border whitish. Eyes approximate to each other. Palpi tawny. Antennæ tawny, moniliform, rather stout. Prothorax transversely elliptical, not longer than half its breadth, thickly and minutely punctured, very pilose; fore border rounded, vaulted in the middle, extending very little beyond the head; hind border slightly rounded. Mesothorax and metathorax piceous. Abdomen tawny, piceous towards the tip and beneath; sides very pilose; supra-anal lamina notched; styles distinct. Cerci piceous, lanceolate. Legs stout, very pilose, moderately stout; arolia small. Wings extending much beyond the abdomen. Fore wings brown, semicoriaceous, coriaceous and dark reddish brown at the base; costa pubescent; transverse sectors irregular towards the tip; intermediate longitudinal veins not apparent. Hind wings cinereous, brownish along the costa; veins tawny, intermediate longitudinal veins indistinct; transverse sectors whitish. Length of the body $8\frac{1}{2}$ lines (=17·8 mm.); of the wings 30 lines (=63 mm.).

Hab: Java. In Mr. Saunders' collection.

Sub-family 9. OXYHALOINAE.

Brunner. Syst. Blatt. p. 251 (1865); Révision. pp. 11 and 40 (1893).

Head large, convex. Eyes far apart. Pronotum round or quadrate, leaving the head free. Anterior part of the wings pointed, or the wings with much produced apical field, or wings twice as long as elytra, folded in repose. Femora not armed beneath. Claws with a distinct arolium. Supra-anal lamina of both sexes short, transverse, its posterior margin straight or rounded. Subgenital lamina of ♂ somewhat produced, furnished with a single style.

Key to the Malayan Genera of the Oxyhaloinæ.

After Brunner, Syst. Blatt. p. 48.

1. Campus apicalis tertiam alae partem non superans, venulis nullis.
   2. Elytrorum vena scapularis pinnatim ramosa, illorum venae axillares distinctae. *Chorisoneura*, Brunner.
   2¹. Elytrorum vena scapularis ramis axi longitudinali parallelis instructa, venae axillares indistinctae. (Alarum campus triangularis latus, reflexus). *Arcolaria*, Fieber.
1¹. Campus apicalis triangularis dimidiae alae longitudine, venulis confertissimis. *Diploptera*, Saussure.

Genus ***DIPLOPTERA,*** Saussure.*

Saussure. Rev. Zool. (2), XVI, p. 325 (1864).

Alæ transversim duplicatæ, apice supra proflexæ. Corpus deplanatum; pronotum semicirculare, utrinque angulatum; tegmina cornea, sulco anali nullo; alæ valde reticulatæ, secundum longitudinem et in medio transversim bis duplicatæ (facies *Silphæ*).

Diploptera dytiscoides, Serville (Plate VI, fig. 31).

Blatta dytiscoides, Serville. Ins. Orth. p. 102 (1839).
Prosoplecta silpha, Saussure. Rev. Zool. (2) Vol. XVI, p. 325 (1864).
Diploptera silpha, Saussure. Mém. Mex. Blatt., pp. 167, 178, pl. II, fig. 28 (1864).
Eleutheroda dytiscoides, Brunner. Syst. Blatt. p. 265, pl. VI, fig. 29 A-E (1865).
Diploptera dytiscoides, Brunner, Révision, p. 41 (1893).
Diploptera dytiscoides, Kirby. Syn. Cat. Orth. Vol. I, p. 176 (1904).

♂ 6‴ (= 12·6 mm); ♀ 8‴ (= 16·8 mm). Corps ovolaire, assez court. Tête lisse, d'un brun de poix luisant. Labre jaunâtre. Prothorax presque semicirculaire, coupé droit postérieurement, un peu sinué aux angles postérieurs; il est sans rebords, d'un brun de poix mat et presque chagriné. Elytres d'un brun-marron mat, un peu plus courtes que l'abdomen, arrondies au côté extérieur, droites à l'interne, finissant en pointe mousse. Elytre droite avec une depression longitudinale près du bord interne, qui est recouverte dans le repos par le bord de l'élytre gauche; toutes deux de consistance plus solide que dans la plupart des autres Blattes, pointillées, mais sans aucune strie. Ailes du double plus longues que les élytres étant deployées, et cachées sous celles-ci à l'état de repos; elles sont larges, diaphanes, réticulées, à mailles larges, carrées, et offrent en outre quelques grosses nervures brunes, longitudinales. Abdomen un peu enlargi postérieurement. Dessous du corps d'un brun de poix, luisant, ainsi que les cuisses; jambes et tarses plus clairs. Antennes plus longues que le corps, d'un brun-marron foncé. ♂ ♀.

Brunner (Syst. Blatt. p. 265) gives the following short description:

Fusco-castanea, opaca. Capite et abdomine nigris. Pedibus castaneis. ♂ ♀.

long.	♂	♀
corporis	15·5 mm.	22 mm.
pronoti	4 mm.	4·5 mm.
pron. transv.	6 mm.	8 mm.
elytrorum	10 mm.	14·5 mm.
alarum	18 mm.	26 mm.

* This genus supersedes *Eleutheroda*, Brunner. See Brunner, Révision, p. 40 (1893).

Hab: Australia (Serville); Tahiti (Brunner, Syst. Blatt.); Burmah (Brunner, Révision).—The Oxford Museum contains specimens from Ceylon, Madras and Honolulu.—There is a specimen in the Raffles Museum caught on the slope of Fort Canning, Singapore, Febr. 10th, 1915.

Genus ***CHORISONEURA,*** Brunner von Wattenwyl.

Brunner. Syst. Blatt. p. 255 (1865).

Elytrorum venâ scapulari ab internedia sejunctâ. Alis perfecte explicatis, campo apicali membranaceo instructis. Femoribus inermibus, pilosis. Laminâ supra-anali marium parum productâ, feminarum valde productâ, emarginatâ; laminâ subgenitali marium stylis instructâ. Segmento ultimo ventrali feminarum producto, medio profunde emarginato.

Chorisoneura lativitrea, Walker.

***Blatta lativitrea*, Walk. Cat. Blatt. B. M. p. 223 (1868).**

***Phyllodromia latiritrea*, Kirby. Syn. Cat. Orth. Vol. I, p. 91 (1904).**

♂. Ochracea, longi-elliptica, subtus albido-flava; caput prothoracem paullo superans; fascia antica saturate ochracea; oculi invicem remoti; antennæ pallide testaceæ, corpore multo longiores, prothorax albido marginatus, lateribus late pellucidis valde rotundatis, margine postico recto; cerci graciles, longissimi; pedes albido-flavi, femoribus setosis; alæ anticæ latiusculæ, abdomen sat superantes, spatio costali diphana, costa rotundata; alæ posticæ diaphanæ.

♂. Ochraceous, elongate-elliptical, smooth, shining, whitish-yellow beneath. Head extending a little beyond the prothorax, with a deep ochraceous band on the fore part of the vertex. Eyes tawny, wide apart. Antennæ pale testaceous, much longer than the body. Prothorax whitish-bordered, a little longer than half its breadth, broadly pellucid on each side; fore border truncated; sides very much rounded; hind border straight. Cerci slender, setose, very long. Legs whitish-yellow, moderately long and stout; femora with short bristles. Wings extending rather beyond the abdomen. Fore wings rather broad; costa rounded; left wing broadly pellucid along the costa; right wing pellucid, with a diffuse ochraceous streak; longitudinal veins simple; transverse sectors regular. Hind wings pellucid. Length of the body 4 lines (=8·4 mm.); of the wings 9 lines (=19 mm.).

Hab: Cambodia. (Walker.)—Kuching, Sarawak (Oxford Museum).

Genus ***AREOLARIA,*** Fieber.

Brunner. Syst. Blatt. p. 259 (1865).

Pronoto transverso, caput liberante, margine laterali plicato. Elytris corneis, oblongis, convexiusculis, apice acuminatis, venis longitudinalibus paucis, vix perspicuis. Alis

campo triangulari apicali majusculo, plicato. Pedibus gracilibus, femoribus, exceptâ spinâ apicali, muticis. Laminâ supra-anali feminarum triangulari, laminâ subgenitali marium latissimâ, stylis minimis instructâ.

Areolaria signata, Shelford.

Areolaria signata, Shelf. T. E. S. 1906, pp. 273-4.

♂ and ♀. Head black, vertex with a testaceous patch on which occur two short black lines, maxillary palps testaceous, antennæ black, incrassated in the basal half and plumose, the apical half with sixteen joints testaceous and the terminal three joints fuscous. Pronotum almost quadrangular, broader than long, sides deflexed slightly, disc closely punctate, black with a central testaceous vitta incompletely divided longitudinally, posterior margin narrowly testaceous, lateral margins testaceous-hyaline. Tegmina corneous, mediastinal field hyaline, the remainder griseo-testaceous with a broad fuscous stripe running along the radial vein, then turning at right angles to cross the apex of the anal field and to meet its fellow of the opposite tegmen, left tegmen with a fuscous stripe on the sutural margin, the portion of the right tegmen that is overlapped by the left, is black and shining; all the veins marked by lines of punctures. Scutellum prominent, black, punctate. Wings hyaline, marginal field infuscated, thirteen costal veins, strongly incrassated and connected by transverse venulæ, median vein simple, medio-discal area crossed by nine transverse venulæ, ulnar vein tri-ramose, first axillary vein quadriramose, triangular apical field very large, unequally divided by a longitudinal vein. Abdomen of male flavid above, fuscous below; supra-anal lamina, shortly produced, triangular; sub-genital lamina narrower, apex deeply and triangularly cleft with two short styles, cerci flavid. Abdomen of female broader, fuscous above and below; supra-anal lamina more produced with a median carina, sub-genital lamina very large, its surface with shallow confluent punctures. Front legs and all the coxæ fuscous, all the tarsi, the mid and posterior tibiæ testaceous with the bases fuscous, the mid and posterior femora testaceous at base, fuscous at apex.

Total length, 9 mm.: length of tegmina 6·5 mm.

Hab: Kuching, Sarawak. (Shelford).— Kina Balu, B. N. Borneo (Oxford Museum).

Shelford adds: The incrassated and plumose antennæ in both sexes will serve to distinguish this species from those already described.

Areolaria sumatrana, Shelford.

Areolaria sumatrana, Shelf. Deutsch. Ent. Zeit. 1909, p. 621.

♀. Head rufous (antennæ missing). Pronotum trans-

versely sub-quadrate, punctate, rufous, the lateral and posterior margins testaceo-hyaline. Tegmina piceous, seriate-punctate, marginal area and discoidal sectors testaceous. Wings castaneous, mediastinal vein 3-ramose, 12 costals, these with the rami of the mediastinal vein incrassated, medio-discal area nearly twice as broad as medio-ulnar, ulnar vein bifurcate, 1st axillary vein 4-ramose, triangular apical area large. Abdomen above and beneath and legs orange-rufous. Total length 8·2 mm; length of tegmina 6·6 mm; pronotum 2 × 2·8 mm.

Hab: Sumatra.

Allied to *A. signata*, Shelford, but differently coloured.

Areolaria fieberi, Brunner von Wattenwyl.

Areolaria fieberi, Brunner. Syst. Blatt. p. 260, pl. VI, fig. 27 A-E (1865).

Blatta dermestoides, Walker. Cat. Blatt. B. M. p. 95 (1868).

Areolaria fieberi, Kirby. Syn. Cat. Orth. Vol. I, p. 177 (1904).

Ferruginea, margine laterali pronoti et elytrorum testaceo, vittâ fuscâ appositâ. Alis infumatis, margine antico ferrugineo. ♀.

Long.	♀
corporis	7·5 mm.
pronoti	2 mm.
pron. transv.	3 mm.
elytrorum	6·2 mm.
alarum	7·5 mm.

Hab: Batavia, Java (Brunner).—Penang (Kirby).

Areolaria consocia, Walker.

Blatta consocia, Walker. Cat. Blatt. B. M. p. 96 (1868).

Areolaria consocia, Kirby. Syn. Cat. Orth. Vol. I, p. 177 (1904).

♀. Picea, subtus fulva; caput fulvum, nitens; prothorax pubescens, lateribus margineque postico pallide testaceis fere hyalinis; alae anticae pilosae; alae posticae nigricantes.

♀. Piceous, elliptical, slightly shining, tawny beneath. Head tawny, shining, slightly punctured, extending a little beyond the prothorax.* Eyes black, wide apart. Antennæ black, tawny towards the tips. Prothorax thickly and minutely punctured, densely covered with pale hairs; fore border slightly truncated; sides and hind border pale testaceous, nearly hyaline; sides much rounded; hind border hardly rounded. Abdomen minutely punctured beneath. Legs tawny, stout: femora setose. Wings extending a little beyond the abdomen. Fore wings coriaceous, pilose, thickly and minutely punctured between the veins; costa rounded. Hind wings blackish. Length of the body 3 lines (= 6·3 mm.); of the wings 6 lines

* The original gives 'head', but, no doubt, prothorax is meant.

(= 12·6 mm.).
Hab: Penang.

Sub-family 10. PERISPHAERINAE.

Brunner, Syst. Blatt. p. 302 (1865).

Capite a pronoto obtecto. Hoc in maribus transverse lenticulari, in feminis semiorbiculari. Mares elytris perfecte explicatis. Feminæ elytris vel nullis, vel rudimentariis, vel perfecte explicatis, corneis (*Proscratea*, *Hormetica*). Alis, quum adsunt, flabellatim plicatis. Femoribus inermibus, tarsis arolio instructis. Abdominis segmentis dorsalibus postice truncatis, angulis non productis, segmenta ventralia non excedentibus. Laminâ supra-anali feminarum corneâ, rotundatâ, nec incisâ, nec plicatâ, marium subquadratâ, angulis rotundatis. Cercis marium laminam supra-analem superantibus, depressis; feminarum brevissimis, triangularibus. Laminâ subgenitali marium amplâ, stylis instructa, vel stylis nullis.

Key to the Malayan Genera of the Perisphærinæ.

(Adapted from Saussure and Zehntner, Rev. Suisse Zool. Vol. III, p. 8 (1895)).

1. Tarsi longi, graciles; metatarsus posticus articulis reliquis tarsi simul sumptis longior. Tibiae longe spinosae; posticae supra 3-seriatim spinosae.

   2. Uterque sexus alatus. Vertex prominulus. Pronotum deplanatum. Cerci laminam supra-analem superantes. Femora anteriora subtus inermia. Arolia inter ungues tarsorum nulla. Insecta plerumque venuste picta. *Paranauphoeta*, Brunner.

   2¹. Vertex prominulus. Pronotum parabolicum, valde rugosum. Femora subtus mutica. Feminae elytris squamiformibus haud articulatis munitae. Mares condite alati. Tarsi arolio instructi. Cerci laminam supra-analem leviter superantes, ♀ crassi triangulares. *Glyptopeltis*, Saussure.

1¹. Pedes mediocres vel breves, tarsis robustioribus. Metatarsus posticus quam reliqui articuli tarsi computati brevior. Pronotum postice transversum vel arcuatum, haud angulatim retroproductum. Feminae apterae, vel rudimentis squamiformibus elytrorum haud articulatis instructae; cereis brevissimis, frequenter tuberculiformibus. Mares condite alati vel apteri.

   2. Corpus ♀ valde fornicatum, politum, in formam sphaeroidalem contractile. Pronotum segmentum sphaerae imitans. Meso—et metanotum leviter coaretata, angulis anticis laevigatis. Abdominis segmenta per sulcum transversum nullum divisa. *Perisphaeria*, Serville.

   2¹. Corpus minus fornicatum; abdomine depressiusculo, valde punctato. Meso—et metanotum utrinque haud abbreviata, lateraliter tota superficie punctata, angulis retro-productis. Abdominis segmenta per sulcum transversum divisa. *Pseudoglomeris*, Brunner.

Genus ***PARANAUPHOETA***, Brunner von Wattenwyl.

Brunner, Syst. Blatt. p. 397 (1865).

Pronoto antice rotundato, caput liberante, postice truncato, disco depresso, plano. Elytris scutellum magnum liber-

antibus, medio angustatis, margine antico costato, venis distinctis, venâ anali marginem saturalem medio attingente. Alis membranaceis. Pedibus gracilibus. Abdomine elongato, laminâ supra-anali rotundatâ, cercis breviore, laminâ subgenitali marium semiorbiculariter productâ, stylis instructâ.

Paranauphoeta circumdata, De Haan.

Blatta (*Nauphoeta*) *circumdata*, De Haan. Temminck, Verhandel. Orth. p. 52 (1842).

Paranauphoeta circumdata, Brunner. Syst. Blatt. p. 399, pl. XIII, fig. 59 A-E (1865).

Nauphoeta adjuncta, Walker. Cat. Blatt. B. M. p. 38 (1868).

Paranauphoeta circumdata, Kirby. Syn. Cat. Orth. Vol. I, p. 180 (1904).

Brunner's description is as follows:

Fusco-nigra, opaca. Vertice lineâ transversâ flavâ, antennis nigris, apice sulphureis. Pronoto latere flavo-limbato, utroque elytro 4 maculato, elytri dextri parte obtectâ hyalinâ. ♂ ♀.

Long.	♂	♀
corporis	21 mm.	26 mm.
pronoti	4·5 mm.	5·5 mm.
pron. transv.	7 mm.	8·5 mm.
elytrorum	19 mm.	21 mm.

Hab: Padang, Sumatra (De Haan). Banjermassin, Borneo (De Haan). Cambodia (Brunner). Assam (Oxford Museum).

Paranauphoeta basalis, Serville. (Plate II, fig. 11).

Blatta basalis, Serv. Ins. Orth. p. 95 (1839).

Blatta (*Nauphoeta*) *basalis*, De Haan. Temminck, Verhandel., Orth. p. 52 (1842).

?*Paranauphoeta basalis*, Brunner. Syst. Blatt. p. 398 (1865).

Paranauphoeta basalis, Kirby. Syn. Cat. Orth. Vol. I, p. 179 (1904).

Long. un pouce (=25 mm.). Corps allongé, presque linéaire, d'un brun de poix fort luisant. Tête de cette couleur: sa partie supérieure avec une ligne transverse d'un jaune ocre, formant un bandeau entre les yeux. Prothorax presqu' orbiculaire, arrondi au bord antérieur et sur les côtés, coupé droit postérieurement; assez inégal sur son disque: bords latéraux avec une marge étroite, d'un jaune d'ocre. Elytres de la longueur de l'abdomen et de la couleur du corps, offrant chacune à la base, une bande transverse, arquée, blanchâtre, assez large; atteignant la suture par l'une de ses extrémités, mais l'autre n'allant pas tout-à-fait jusqu'à l'angle huméral, qui est très-arrondi. Ailes transparentes, brunâtres, de la longueur des élytres. Abdomen avant latéralement, au bord de chaque plaque dorsale et de chaque plaque ventrale, une tache arrondie, d'un jaune ochre: plaque suranale presqu' entièrement de cette couleur. Les trois premières plaques

ventrales offrant chacune au milieu, une tâche jaunâtre mal dessinée. Antennes brunes (au moins dans leur première moitié, le reste manque). Pattes d'un brun luisant; cuisses à peine épineuses: épines tibiales assez fortes. Les quatre dernières cuisses ayant leur base inférieure et l'enfoncement articulaire de leur extrémité, d'un jaune sale; les hanches intermédiaires et postérieures ainsi que leur trochanters sont aussi de cette couleur. ♀.

Hab: Java (Serville). Padang (De Haan). Semangko Pass (Selangor—Pahang), March 1912 (Raffles Museum).

Paranauphoeta brunneri, Shelford.

Paranauphoeta brunneri, Shelf. A. M. N. H. (7), Vol. XIX, p. 46 (1907).

♀. Closely allied to *P. rufipes*, Haan, but smaller. Head with three maculæ on the vertex: the ocelli, genæ, clypeus, and basal joints of the palpi testaceous; apical joints of antennæ not testaceous. Pronotum with the testaceous margins much narrower than in *P. rufipes*. Tegmina and wings as in *P. rufipes*. Abdomen above less strongly marked with testaceous: subgenital lamina ample, produced, emarginate. Coxæ testaceous, castaneous at base: femora testaceous at base, remainder castaneous: tibiæ and tarsi rufo-castaneous.

Total length 20 mm: length of body 18 mm: length of tegmina 17·1 mm.

Hab: Kuching, Sarawak (Shelford, 1900): one example (Oxford Museum).

Paranauphoeta lyrata, Burmeister. (Plate VI, fig. 32).

Nauphoeta lyrata, Burm. Handb. Ent. Vol. II, p. 508 (1838).

Blatta ornata, Serville. Ins. Orth. p. 99 (1839).

Blatta (Nauphoeta) lyrata, De Haan. Temminck, Verhandel. Orth. p. 52 (1842).

Paranauphoeta lyrata, Brunner. Syst. Blatt. p. 401 (1865).

Nauphoeta lyrata, Walker. Cat. Blatt. B. M. p. 37 (1868).

Paranauphoeta lyrata, Kirby. Syn. Cat. Orth. Vol. I, p. 180 (1904).

Paranauphoeta lyrata, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 559 (1904); Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).

Nigra, pronoti margine vittisque duabus arcuatis albis; elytris maculis tribus albis: segmentis abdominalibus supra albo-marginatis. Long. 8‴ (=16·8 mm.).

Hab: Java (Burmeister). Borneo (Brunner). Malacca (Brunner). Trang, Lower Siam (Rehn). Sumatra (Rehn).—The Raffles Museum has specimens from the Semangko Pass (Selangor—Pahang boundary), from Bukit Kutu (Selangor), and Kuching (Sarawak), and there are in the Oxford Museum one specimen, from Celebes, collected by Wallace, and numerous specimens, from Kuching, Sarawak, collected by Shelford.

Paranauphoeta bilunata, De Haan.

Blatta (Nauphoeta) bilunata, De Haan. Temminck, Verhandel., Orth. p. 51 (1842).

Paranauphoeta bilunata, Brunner. Syst. Blatt. p. 402 (1865).

Paranauphoeta bilunata, Kirby. Syn. Cat. Orth. Vol. I, p. 180 (1 04).

Prothorace nigro, lineis duabus lateralibus flavis; elytris concoloribus, atro-fuscis. Long. elytr. 11‴; long. corp. 9‴. Java.

Brunner's description is almost identical: Promoto nigro, lineis duabus lateralibus flavis. Elytris concoloribus, nigro-fuscis. ♂ ♀.

	Long. sexus?
corporis	20·7 mm.
elytrorum	25·3 mm.

Hab: Java (De Haan).

Paranauphoeta javanica, Saussure.

Paranauphoeta javanica, Sauss. Mém. Soc. Genève, XXIII, p. 153 (1872).

Paranauphoeta javanica, Kirby. Syn. Cat. Orth. Vol. I, p. 180 (1 04).

Flavo-testacea: fascia frontali abdominisque fascia intramarginali fuscis: promoto rufo-castaneo antice flavo-limbato; elytris testaceo-hyalinis; alis hyalinis vena discoidali ramos 2 apicales, 6-7 incompletos emittente. ♂

longueur du corps: ♂ 21 mm; longueur du pronotum ♂ 4 mm.
——— de l'élytre 20 mm; largeur ——— 5·5 mm.

Hab: Java.

Paranauphoeta atra, Shelford.

Paranauphoeta atra, Shelf. T. E. S. 1906, p. 275.

♂ and ♀. Entirely black, shining except the apical third of the antennæ which is testaceous, and the labrum which is flavo-testaceous. Pronotum marked with irregular depressions. Tegmina with radial vein ramose, fourteen to fifteen costal veins, their basal halves obsolescent, anterior ulnar vein bifurcate, posterior ulnar multi-ramose, anal vein not reaching the middle of the sutural margin. Wings infuscated, radial vein irregular, costal veins obsolete, ulnar vein sending many branches to the dividing vein, an inconspicuous apical triangle. Supra-anal lamina in both sexes large, the cerci barely exceeding it, its posterior margin in the female slightly emarginate; sub-genital lamina in male large, asymmetrical with prominent acuminate styles, in the female ample.

Total length, 27 mm.; length of tegmina, 21 mm.

Hab: Kuching, Sarawak (Shelford).—Since collected by Messrs. Robinson and Kloss at Sandaran Agong, 2,500′, Korinchi Valley, Sumatra.

Genus ***GLYPTOPELTIS,*** Saussure.

Saussure, Mém. Soc. Genève, Vol. XXIII, p. 119 (1872).

Les sexes très-divergents.—Corps ponctué, à éclat metallique. *Tête* arrondie, peu ou pas débordante; yeux distants; taches ocellaires distinctes.—*Antennes* épaisses, moins longues que le corps, ornées d'un anneau pâle. *Pronotum* à surface ruguleuse, offrant en dessus, le long du bord antérieur et des bords latéraux, une sorte de bourrelet vague; le bord lui-même finement ourlé, à tranchant dirigé en bas. La face inférieure un peu épaissie, offrant deux petites carènes obliques. *Pattes* courtes, poilues. Cuisses assez comprimées, ciliées en dessous, armées d'une épine unique au milieu du bord inférieur (et de 2-3 autres apicales). Tibias courts, très-épineux; tarses courts, assez trapus, mais le premier article médiocre; la pelotte du dernier article court. *Abdomen* ayant l'avant-dernier segment ventral échancrée en arc de cercle. Plaque suranale petite: cerci styliformes, dépassant la plaque suranale.

Glyptopeltis couloniana, Saussure.

Glyptopeltis couloniana, Sauss. Mém. Soc. Genève, Vol. XXIII, p. 124, pl. X, fig. 42 (1872).

Glyptopeltis couloniana, Kirby. Syn. Cat. Orth. Vol. I, p. 182 (1904).

Atra, antice crasse, postice tenuius punctata; capite vix prominulo, clypeo palpisque ultimo articulo excepto testaceis; pronoto parabolico, disco inaequali, utrinque sulcato; elytris teguliformibus; lamina supra-anali trapezino-rotundata, infragenitali plana. ♀.

Longueur du corps: ♀ 19 mm; longueur du pronotum ♀ 7·2 mm.
——— de l'élytre 2·7 mm; largeur ——— 8·6 mm.
—— tibia postérieur 5·1 mm; largeur de l'abdomen 10·7 mm.

Hab: Java?

Glyptopeltis biguttata, Saussure.

Glyptopeltis biguttata, Sauss. Mém. Soc. Genève, Vol. XXIII, p. 122, pl. X, fig. 41 (1872).

Glyptopeltis biguttata, Kirby. Syn. Cat. Orth. Vol. I, p. 182 (1904).

Nigro-cerulea, vel chalybea, valde punctata; ocellis, clypei margine palpisque flavidis; antennis crassiusculis, ultra medium annulo flavido; pronoto parum rugoso, maculis 2 disci politis, pedibus fusco-nigris:

♀ pronoto maculis 2 disci aurantiis, angulis posticis denti-formibus; elytris tegulifórmibus; abdominis apice pilosa, lamina supra-anali rotundata, infragenitali plana.

♂ gracilis; pronoto immaculato, margine postico valde arcuato; elytris fusco-nigris, alis infuscatis, margine antico late opaco.

longueur du corps:	♀ 21	mm;	♂ 19	mm.
——— de l'élytre	3	mm;	18	mm.

longueur du pronotum	7·6 mm;	5 mm.
largeur du pronotum	9·2 mm;	6·6 mm.

Hab: Java.

Genus ***PERISPHAERIA***, Serville.

Perispherus, Serville, Ann. Sci. Nat. Vol. XXII, p. 44 (1831).
Perisphaeria, Burmeister, Handb. Entom. Vol. II, p. 483 (1838).
Perisphoera, Serville, Ins. Orth., p. 132 (1839).
Perisphaeria, Brunner, Syst. Blatt. p. 303 (1865).

Brunner's definition is as follows:

Mares alati, feminæ apteræ. Capite obtecto. Pronoto marium lenticulari, margine antico semicirculari, supra caput sub-cucullato, margine postico rotundato. Pronoto feminarum semiorbiculari, plus minus elongato, postice truncato. Elytris marium linearibus, areâ mediastinâ latiusculâ. Alis venâ mediâ rectâ, vel apice decurvâ, integrâ. Pedibus crassiusculis, tarsorum articulo primo duos sequentes parum superanti. Abdomine ovato, segmentis dorsalibus margine postico truncatis, angulis obtusis, laminâ supra-anali marium transversâ, feminarum rotundatâ, margine integro. Cercis marium lanceolatis, depressis, laminam supra-analem valde superantibus; feminarum conicis, minimis, non articulatis.

Perisphaeria armadillo, Serville. (Plate VII, fig. 39).

Perisphaeria armadillo, Serv. Ann. Sci. Nat. Vol. XXII, p. 44 (1831); Ins. Orth. p. 133, pl. III, fig. 2 (1839).
Deroplatys flavicornis, pt., Brunner. Syst. Blatt. p. 321 (1865).
Perisphaeria armadillo, Kirby. Syn. Cat. Orth. Vol. I. p. 190 (1904).

Serville's description, in Ins. Orth. p. 133, is as follows:

Long. 8 lig. (=16·8 mm.). Corps d'un brun noirâtre luisant. Tête pointillée, jaune, avec la face d'un brun ferrugineux: palpes jaunes: près de la base de chaque antenne il y a un point saillant, jaune (ocelle). Dessus du corps distinctement ponctué. Antennes jaunes, atteignant à peu près la moitié du corps: poitrine jaune ainsi que les pattes. Femelle.

Hab: Java (Serville).—Bukit Kutu, Selangor, 3,000′. April 1915 (Raffles Museum).

Perisphaeria glomeriformis, Lucas. (Plate VII, fig. 10).

Perisphaera glomeriformis, Luc. Ann. Soc. Ent. France, (4), Vol. III, p. 408, pl. IX, figs. 10, 10*a* (1863).
Perisphaeria glomeriformis, Sauss. and Zehntn. Rev. Suisse, Zool. Vol. III, p. 37 (1895).
Perisphaeria glomeriformis, Kirby. Syn. Cat. Orth. Vol. I. p. 190 (1904).

P. cupreo-aenea, nitida, subpunctulata: capite nigro subaeneo, punctato: antennis, palpis pedibus sternoque flavo-testaceis: abdomine infra nigro, fortiter punctato: cercis brevibus, rufis. Long. 16 mm., lat. 9·5 mm.

Hab: Cochin China and Philippines. (Lucas).—Bukit Kutu, Selangor, 3,000′, April 1915 (Raffles Museum).

Perisphaeria lucasiana, Saussure and Zehntner.

Perisphaeria lucasiana, Sauss. and Zehntn. Rev. Suisse Zool. Vol. III, p. 36 (1895).

Perisphaeria lucasiana, Kirby. Syn. Cat. Orth. Vol. I, p. 190 (1904).

♀. Nigra, leviter virescens, nitidissima, supra omnino crassiuscule punctata, in abdomine crassius quam in thorace; vertice, ore, antennis pedibusque, flavis. Facies impressionibus 2 profundis notata. Oculi inviem valde propinqui. Ocelli obsoleti. Frons ad verticem planata, punctata. Pronoti margo anterior vix productus, in medio ab infero visus rotundato-subangulatus. Anguli segmentorum thoracis leviter producti, rotundati, carinula utrinque obliqua, mesonoti et metanoti obsoleta; illa mesonoti nonnunquam ad basin distincta. Cerci nigri. Venter lævigatus parum punctatus. Long. circ. 13; pronot. 6; latit. pronot. 7·5 mm.

Hab: Java.

Genus **PSEUDOGLOMERIS,** Brunner von Wattenwyl.

Brunner, Ann. Mus. Genova, (2), Vol. XIII, p. 42 (1893).

♀ corpore toto in modum Glomeridum involutum, glabro (excepto *Ps. glomeris* Sauss. corpore leviter holosericeo), nitido, levi vel punctis impressis raris signato. Oculi valde approximati. Antennæ corpore dimidio breviores. Pronotum semiorbiculare, valde fornicatum, caput totum obtegens, subtus non incrassatum, dente, mesonotum complectente instructum. Meso—et metanotum latere in angulos plus minus acutos producta. Pedes brevissimi, compressi. Metatarsus posticus subtus per totam longitudinem pulvillo instructus. Lamina supra-analis integra, rotundata. Cerci minimi.

♂ corpore alato. Oculi subcontigui. Antennæ corpus subæquantes. Pronotum inæquale, in omnibus speciebus distincte punctatum, lentiforme, latere plus minus deflexum, caput totum obtegens, subtus in dentem productum. Elytra margine antico recto, venis distinctis. Alarum vena ulnaris multiramosa. Pedes compressi, graciliores. Metatarsus posticus subtus pulvillo, dimidiam longitudinem vix superante instructus. Lamina subgenitalis stylo unico instructa. Larvæ ♂ habitum ♀ imitantes.

Ce genre comprend beaucoup d'espèces, qui ne dépassent pas les Indes et qui sont difficiles à distinguer. Les ♂ sont peu connus.

Pseudoglomeris flavicornis, Burmeister.

Perisphaeria flavicornis, Burm. Handb. Ent. Vol. II, p. 488, (1838).
Derocalymma flavicornis, Brunner. Syst. Blatt. p. 321 (1865).

Pseudoglomeris flavicornis, Bolivar, Ann. Soc. Ent. France, Vol. LXVI, 1897, p. 300.

Pseudoglomeris flavicornis, Kirby. Syn. Cat. Orth. Vol. I, p. 190 (1904).

Pseudoglomeris flavicornis, Annandale, Mem. As. Soc. Bengal, Vol. I, No. 10, p. 207 (1906).

Latior, atra; pronoto basi gibbo, supra caput cucullato, margine inferiori plano, antennis palpis tibiis cercisque testaceis. Long. $6\frac{1}{2}'''$ (= 13·7 mm.).—Java.

Brunner (Syst. Blatt. p. 321) quotes Burmeister's description and gives the length of this species as 15 mm. Amandale records the species from Rámanád, S. India, and gives its dimensions as follows:

length	♂ 13 mm.	♀ 11 mm.
breadth of pronotum	5 mm.	6 mm.
expanse of wings	26 mm.	———

Hab: Java. S. India.

Pseudoglomeris flexicollis, Walker.

Zetobora flexicollis, Walk. Cat. Blatt. B. M. p. 187 (1868).

Pseudoglomeris flexicollis, Kirby. Syn. Cat. Orth. Vol. I, p. 191 (1904).

♀. Nigra, fusiformis, dense punctata; capitis margo anticus testaceus; oculi invicem fere conjuncti; antennæ piceæ, basi fulvæ, corpore breviores; prothorax caput superans, aspere punctatus, antice cucullatus et utrinque impressus, lateribus subangulatis, margine postico vix rotundato; segmenta ventralia rufo marginata; pedes breviusculi; tibiis piceis rufo spinosis; alæ anticæ coriaceæ, dimidio apicali fusco semicoriaceo; alæ posticæ fuscæ.

♀. Black, fusiform, thickly punctured above, smooth beneath. Head small; fore border testaceous. Eyes red, nearly connected. Antennæ piceous, tawny at the base, shorter than the body. Prothorax roughly punctured, hooded and depressed on each side in front, extending beyond the head, a little longer than half its breadth; sides slightly angular; hind border hardly rounded. Abdomen entire at the tip; hind borders of the ventral segments red. Legs stout, rather short; tibiæ piceous, with red spines; tarsi red; arolia moderately large. Wings extending a little beyond the abdomen. Fore wings coriaceous, brown and semicoriaceous beyond the middle. Hind wings brown. Length of the body $10\frac{1}{2}$ lines (= 22 mm.); of the wings 22 lines (= 16 mm.).

Much resembles *Z. rugosa*, but the prothorax is more vaulted in front.

Hab: Singapore. In Mr. Saunders' collection.

Sub-family 11. PANESTHINAE.

Brunner, Syst. Blatt. p. 384 (1865).

Capite maximo, latissimo. Antennis corpore brevioribus, crassiusculis. Pronoto vel semiorbiculari, caput obtegente, vel antice truncato, vel medio emarginato, disco inaequali. Elytris vel perfecte explicatis, corneis, nitidis, postice contractis, vel abbreviatis, vel nullis. Pedibus crassis, femoribus inermibus,* tarsis unguibus magnis, arolio nullo. Abdomine crasso, segmentis dorsalibus angulis posticis obtusis, laminâ supraanali latâ, rotundatâ. Laminâ subgenitali marium vel rotundatâ, vel transversâ, angustissimâ.

Key to the Malayan Genera of the Panesthinæ.

(Partly after Saussure, Rev. Suisse Zool. Vol. III, p. 301 (1895)).

1. Segmentum septimum marginibus lateralibus crenatis. *Salganea*, Stal.

1¹. Segmentum septimum marginibus lateralibus integris, vel punctatis:

2. Segmenti sexti abdominis anguli haud dentiformiter retroproducti. Pronoti depressio antica transverse trigonalis; suleis binis disci completis, posterius in arcum reconciliatis; trigonum depressionis itaque angulo postico rotundato, per sulcum marginato. *Panesthia*, Serville.

2¹. Segmenti sexti et septimi abdominis anguli dentiformiter producti. Pronoti depressio elongata, retro trans discum elevatum perducta, vel illum excavans; sulci disci tantum antice perspicui, retro evanidi, haud in arcum continui. *Miopanesthia*, Saussure.

1¹¹. Segmentum septimum marginibus lateralibus bis leviter incisis. Pronotum antice margine elevato instructum, in medio trianguliter excavato. *Mylacrina*, Kirby.

Genus ***SALGANEA***, Stål.

Stal. Oefv. Vet. Akad. Forh. 1877, No. 10, p. 37.

Latera segmenti dorsalis ultimi abdominis transversim excavata, excavatione introrsum angustata et sensim minus profunda; lamina supraanalis posterius sensim rotundata, dentibus numerosis distinctissimis instructa; segmentum ventrale ultimum ad margines laterales sulcatum, ad sulcum fortiter elevatum.

To this definition Brunner adds in his 'Revision,' p. 16: 'Ce genre est caractérisé par la crénulation des bords latéraux du septième ségment (différence du genre *Panesthia*) et la couleur uniformément noire des elytres (différence du genre *Caparia*).'

Salganea morio, Burmeister.

Panesthia morio, Burm. Handb. Ent. Vol. II, p. 513, n. 1. (1838).
Panesthia regina, Saussure. Mém. Soc. Genève. Vol. XVII, p. 167, pl. I, fig. 24 (1864).
Panesthia morio, Brunner. Syst. Blatt. p. 392 (1865).
?*Panesthia morio*, Tepper. Tr. R. Soc. S. Austral. Vol. XVII, p. 124 (1893).

*In a few instances the anterior femora bear one, two, or three spines.

Salganea morio, Kirby. Syn. Cat. Orth. Vol. I, p. 200 (1904).
Salganea regina, Kirby. Syn. Cat. Orth. Vol. I, p. 200 (1904).

Burmeister's description which was apparently based upon an immature specimen, is as follows:

Fusco-nigra, pronoti incisura acuta, bituberculata; abdominis segmento antepenultimo margine dentato; elytris brevissimis trigonis, alis submullis. Long. 1½".—New Guinea. Australia.

Brunner describes it from mature ♀ specimens: Aterrima. Pronoti incisurâ anticâ acutâ, subbituberculatâ, disco tuberculis quatuor plus minus distinctis. Elytrorum venis distinctiusculis. Abdominis segmento ultimo dorsali margine laterali dentato. Laminâ supraanali dentibus confertis. ♀.—Ceylon, Java, Amboina.

		long.
corporis	♀	33-52 mm.
pronoti		8-12 mm.
pron. transv.		12·5-18 mm.
elytrorum		37- ? mm.

The largest specimen (♀) in the Raffles Museum, from Kota Tinggi, Johore, presented by Mr. J. A. le Doux, May 1915, has the following dimensions:

total length	♀	55 mm.
body, length		44 mm.
pronotum, length		11 mm.
prontoum, breadth		17 mm.
tegmina, length		46 mm.

Hab: Java (Burmeister, De Haan, Brunner). Ceylon (Vienna Museum). Amboina (Vienna Museum). Also collected by the Rev. G. Dexter Allen at Banting, Sarawak, and by Messrs. Robinson and Kloss in Sumatra (Sungei Kumbang, 1600′, Korinchi Hill Country; and Sandaran Agong, 2500′, Korinchi Valley). The Raffles Museum possesses specimens from Johore, Bukit Kutu (Selangor), Semangko Pass (Selangor-Pahang), and Gunong Kledang, Perak.—Its usual habitat are rotten logs.

Salganea rugulata, Saussure.

Salganea rugulata, Saussure. Rev. Suisse Zool. Vol. III, p. 304 (1895).
Salganea rugulata, Kirby. Syn. Cat. Orth. Vol. I, p. 200 (1904).

♀. Gracilis, minuta, nigra; antennis, ore, pronoto subtus, femoribus, ventre basi, rufo-fulvis. Pronotum depressiusculum, sparse haud crasse punctatum; area antica subtilius remote punctata; margine antico truncato, transverso, vel medio minute inciso; in hoc casu tuberculos minimos 2 praebente; tuberculis 2 centralibus disci minutis vel nullis. Meso,—metanotum et abdomen nitida, sparse punctata. Segmenta 1-5 frequenter margine (saltem in certo luce) angustissime rufo-

limbato. Segmenta 5-7 basi subconstricta, utrinque profunde impressa; 7 postice depressum, subtilius densiusque punctatum, marginibus lateralibus rotundato-crenatis, spina apicali basi divergente. Lamina supraanalis densius haud crasse, vel confertim minute punctata, punctis crassioribus intermixtis: margine postico valde denticulato, (denticulis confertis, trigonalibus, apice hebetatis), ac utrinque dente majore acuto. Cerci trigonales, rufidi. Subtus ultimum segmentum, saltem postice, crassiuscule densiuscule punctatum, margine apicali subtruncato, plicis marginis postici rugosis, etsi supra punctatis. Femora antica inermia. Tarsi graciles; metatarso postico tribus articulis sequentibus paulo longiore.—Long. 22; pronot. 4·9; latit. 7·2; elytr. 20; lat. abd. 9·8 mm.

Hab: Java (Amboina Br.).

Espèce très voisine de la *S. amboinica*, Brun.: paraissant en différer par sa plaque suranale non ponctuée en crible, mais densément rugulée, presque à la manière des *Panesthia serratissima* et *incerta*, Br. et à bord fortement denté.

Genus ***PANESTHIA,*** Serville.

Serville, Hist. Nat. Ins. p. 130 (1839).
Stal, Oefv. Vet. Ak. Forh. 1877, No. 10, p. 37.

Stål's definition is as follows:

Segmentum dorsale ultimum abdominis lateribus haud transversim excavatis, marginibus lateralibus integris; lamina supraanalis apice dentibus obtusis vel obtusissimis instructa, marginibus lateralibus posterius rotundatis, leviter convergentibus; segmentum ventrale ultimum ad margines laterales sulco abbreviato instructum, ad sulcum haud vel obtusissime elevatum; spinæ femorum anticorum, quum adsunt, a basi remotæ.

Brunner, in his 'Révision,' p. 48, points out the chief character of the genus:

'Ce genre est caractérisé par le ségment septième de l'abdomen non crénélé sur les bords latéraux, qui se prolongent en une dent.

Panesthia javanica, Serville. (Plate VI, fig. 34: larva).

Panesthia javanica, Serv. Ann. Sci. Nat. Vol. XXII, p. 38 (1831); Ins. Orth. p. 131, pl. II, fig. 5 (1839).
Panesthia affinis, Burmeister, Handb. Ent. Vol. II, p. 513 (1838).
Panesthia javanica, Brunner, Syst. Blatt. p. 393, pl. XIII, figs. A-E (1865).
Panesthia quadrimaculata, Walker, Cat. Blatt. B. M. p. 21 (1868).
Panesthia javanica, Saussure, Mém. Soc. Genève, Vol. XX, p. 286 (1869); ? Rev. Suisse Zool. Vol. III, p. 312 (1895).
Panesthia javanica, Krauss, Semon Forsch. Austr. Mal. Arch. Vol. V, p. 748 (1903).
Panesthia javanica, Kirby, A. M. N .H. (7), Vol. XI, p. 411 (1903); Syn. Cat. Orth. Vol. I, p. 202 (1904).

Panesthia javanica, Rehn. Proc. U. S. Nat. Mus. Vol. XXVII, p. 559 (1904): Bull. Am. Mus. Nat. Hist. Vol. XXVI, p. 179 (1909).

Serville's description in Ins. Orth. p. 131 is as follows: Long. 2 pouces (=50 mm.). Corps entièrement d'un brun de poix, glabre et luisant. Tête offrant près de la base de chaque antenne, un point ferrugineux (ocelle). Labre de cette couleur. Prothorax transversalement orbiculaire; son disque inégal, creusé antérieurement; bord antérieur ayant le milieu de son échancrure relevé en une petite saillie pointue; chaque angle de cette échancrure saillant et dentiforme. Elytres de la longueur de l'abdomen, très-lisses, la strie arquée est oblique: leur extrémité striée et réticulée très-peu sensiblement. Ailes d'un brun de suie, striées longitudinalement et réticulées. Abdomen très-fortement ponctué en dessus; en dessous la ponctuation est moins forte, principalement sur les deux derniers segments. Antennes de la longueur de la moitié du corps, brunes et glabres. Pattes d'un brun luisant avec les hanches et leurs trochanters de couleur ferrugineuse. ♂ ♀.—Java.

Brunner's description, in Syst. Blatt. p. 393, is as follows: Nitidissima, nigra. Pronoti incisurâ in mare profundâ, latâ, latere cornigerâ, medio dentatâ: in feminâ triangulari, latere et medio dentatâ. Elytris corporis longitudine, nitidissimis, venis indistinctis. Abdominis segmento ultimo latere integro, angulis posticis in dentem productis. Laminâ supra-anali denticulatâ. Larva quatuor-maculatâ. ♂ ♀.—Java, Philippines, Cambodia, Burmah.

	Long.	
corporis	♂ 31-45 mm.	♀ 42 mm.
pronoti	6-10 mm.	9 mm.
pron. transv.	10-16 mm.	14 mm.
elytrorum	24-37 mm.	33 mm.

Hab: Java (Serville).—Java; Philippines; Cambodia; Burmah (Brunner).—Tjibodas, Java (Krauss).—Sumatra; Trang, Lower Siam (Rehn).—Collected by the Rev. G. Dexter Allen at Banting, Sarawak, and by Messrs. Robinson and Kloss at Sungei Kumbang, 4600′, Korinchi Hill Country, Sumatra.—The Raffles Museum contains specimens from Bukit Timah, Singapore; Klang, Selangor; Bukit Kutu, Selangor; Semangko Pass (Selangor-Pahang); Maxwell's Hill, Perak, 3600′; Pulo Adang, Lower Siam; Lankawi I.; Christmas I.; Mt. Poe, Sarawak, 3500′; and Kina Balu, B. N. Borneo, 1200′.

The favourite habitat of this species are rotten logs, as in the case of *Salganea moria*, but it is much more common than the latter. Its larvæ may always be recognized by the four orange spots, viz. two each on mesonotum and metanotum.

Panesthia ruficeps, Kirby.

Panesthia ruficeps, Kirby. A. M. N. H. (7), Vol. XI, p. 412 (1903): Syn. Cat. Orth. Vol. I, p. 202 (1904).

Size, shape, and general appearance of *P. jaranica*, Serv.; front femora likewise trispinose, and the punctuation very similar. Differs as follows:—Dark brownish red, instead of black mixed with red; the centre of the pronotum, the terminal plate of the abdomen above and below, and the labium shading into blackish. Head otherwise light red (black in typical *P. jaranica*), smooth and shining, clypeus below transversely striated. Tegmina rather lighter chestnut than in *P. jaranica*. Pronotum in front with a distinct central carina in the male, but scarcely more excavated in front in the male than in the female.

Larva with more or less distinct oblique red marks on the meso—and metanotum, often curving round behind into a continuous band, and frequently with additional red marks on the sides.

Hab: Christmas Island.

Kirby adds: The difference in the larvæ is quite sufficient to establish the claims of this insect to be regarded as a distinct species.

Panesthia angustipennis, Illiger.

Blatta angustipennis, Illiger. Magaz. Insekt. Vol. I, p. 185 (1801).

Blatta angustipennis, Burmeister. Handb. Ent. Vol. II, p. 513 (1838).

Panesthia angustipennis, Brunner. Syst. Blatt. p. 395 (1865).

Panesthia aethiops, Walker. Cat. Blatt. B. M. p. 20 (1868).

Panesthia angustipennis, Saussure. Rev. Suisse Zool. Vol. III, p. 312 (1895).

Panesthia angustipennis, Kirby. Syn. Cat. Orth. Vol. I, p. 202 (1904).

Brunner's description is as follows: Pronoti incisurâ in mare parum profundâ, latere et medio dentatâ; feminæ vix impressione indicatâ, dentibus nullis. Elytris nitidissimis, corporis longitudine. ♂ ♀.

	long.	
corporis	♂ 37 mm.	♀ 34 mm.
pronoti	8 mm.	7·5 mm.
pron. trans.	13 mm.	12 mm.
elytrorum	31 mm.	30 mm.

Hab: Borneo; Philippines; Amboina (Brunner). Sumatra (Kirby).

Panesthia mandarinea, Saussure (Plate VI, fig. 33).

Panesthia mandarinea, Sauss. Mém. Soc. Genève, Vol. XVII, p. 168, pl. I, fig. 25 (1863).

Panesthia mandarinea, Wood-Mason. J. As. Soc. Bengal, Vol. XLV, p. 190 (1876).

?*Caeparia mandarinea*, Brunner. Ann. Mus. Genova (2), Vol. XIII, p. 48 (1893).

Panesthia mandarinea, Kirby. Syn. Cat. Orth. Vol. I, p. 204 (1904).

Nigra, nitida, capite prominulo; pronoto brevi et lato, grosse punctato, incisura lata instructo, utrinque tantum subcornigero, sulco profundo, late arcuato; elytris sat angustis, basi nigris, fascia media alba, dein fuscescentibus, apice incoloribus. —China.

Longueur: 32 mm; elytre 26 mm.; largeur du prothorax 11 mm.; longueur 6·5 mm.

I found a single specimen (♂) of this species, dead and dried up, but otherwise in perfect condition, on the gravel drive of the Government bungalow at Lundu, Sarawak, in April 1913. Its characteristics are as follows:

♂. Greater part of the body deep black, shining, punctate. Head black, eyes light yellowish-grey, antennæ black, except for a narrow subapical yellow ring. Pronotum black, corrugated, its antero-lateral margins drawn out into huge horns, separated from the central portion by deep clefts. Mesonotum, metanotum and abdomen deep black. Legs black, except the inner portions of the coxæ and the trochanters which are reddish brown. Anterior femora with two postmedial spines each. Tegmina anteriorly broad, narrower posteriorly, not quite reaching to the end of the abdomen, their basal third deep black, the remainder light yellowish-grey. Cerci black. Posterior angles of the 7th segment ending in short spines. Supra-anal lamina with 8 shallow crenulations.

total length	♂	39 mm.
pronotum, length		9·5 mm.
pronotum, breadth		14·5 mm.
tegmina, length		32 mm.
antennæ		20 mm.

Hab: China (Saussure). Johore (Wood-Mason). Sarawak (Raffles Museum). The Oxford Museum contains a specimen labelled 'Singapore, Mr. Horsley, 1864.'

Panesthia biglumis, Saussure.

Panesthia biglumis, Sauss. Rev. Suisse Zool. Vol. III, p. 319, (1895).

Panesthia biglumis, Kirby. Syn. Cat. Orth. Vol. I, p. 203 (1904).

♀. Minuta, nigra. Antennæ ferrugineæ. Pronotum impresso-punctatum, tubereulis centralibus minimis vel nullis, invicem remotis; area antica valde granulata; margine antico medio arcuato-inciso; angulis plus minus acutis, trigonalibus, erectis fere retro-reflexis; angulis posticis pronoti rectangulis. Elytra squamiformia, lateralia, dimidium metanotum superantia, apice rotundato. Alæ angustissimæ, sub elytra reconditæ, tantum apice perspicuæ. Abdomen politum, sparse punctatum; segmentum 7^m^ et lamina supraanalis crasse irregulariter punctata ac rugata; segmentum 7^m^ basi utrinque profundissime impresso-foveolato-punctatum. Lamina supraanalis dense rugata, subexcavata, margine postico dense multi-denti-

culato, denticulis hebetatis, 8-10, ad inferum deflexis, dente laterali plus minus acuta. Ultimum segmentum ventrale biimpressum, dense rugosum, plicis lateralibus longis, deflexis, ipsis dense rugosis. Femora antica subtus inermia. Long. 25·5-27; pronot. 6·5-7·5; latit. 10-10·5; elytr. 4·5-6 mm.

Hab: India; Sikkim (Mus. Calcuttæ) (Saussure).—Java ? (Kirby).

Panesthia polita, Krauss.

Panesthia polita, Krauss. Semon Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 754 (1903).

Statura parva, elongato-ellipsoidea, convexa. Nigra, nitida, punctata. Caput a pronoto parum obtectum, subtilissime punctatum, antennis, clypeo, labro palpisque ferrugineis, maculis ocelliformibus flavis. Pronotum semiorbiculare, postice rotundatum (♂) vel in medio subtruncatum (♀), convexum, haud impressum, subtiliter punctatum, margine laterali parum elevato. Meso-et metanotum impresso-punctata, marginibus lateralibus subelevatis, in ♀ postice late rotundatim emarginata, angulis lateralibus obtusis. Elytra alæque in ♀ nullæ, in ♂ ? Pedes subtilissime punctati, subglabri. Femora antica subtus bispinulosa. Abdomen impresso-punctatum, tergitis utrinque spinoso-productis, subtus basi rufo-castaneum. Lamina supraanalis ♂ ♀ impresso-punctata, postice sulco intramarginali et utrinque lobulo acuto instructa, margine integro. Cerci trigonales, acuti, rufo-castanei. Lamina subgenitalis ♂ parva, semilunaris, obsolete punctata, ♀ magna semiorbicularis, impresso-punctata.

longitudo corporis	22-25 mm.
longitudo pronoti	4·5- 6 mm.
latitudo pronoti	6·5- 8 mm.

Hab: Tjibodas (Java); Borneo.

Krauss adds: Eine durch den Mangel jeglichen Eindruckes auf dem Pronotum ausgezeichnete Form, die mit *P. birmanica*, Brunner, aus Tenasserim (nur im ♂ Geschlechte bekannt) nahe verwandt ist. Die mir vorliegenden zahlreichen ♀ ♀ halte ich wegen der Härte des Integuments und der Abwesenheit von Flügelscheiden für ausgewachsen. Die ♂ ♂ (Körperlänge 15-18 mm.) dagegen sind weicher, besitzen rostgelbe Beine, und ihr Meso—und Metanotum sind nach rückwärts in stumpfe, mit rostgelber Spitze versehene Flügelscheiden ausgezogen, so dass sie wohl dem letzten Nymphenstadium angehören.

Zahlreiche Larven mit einer Körperlänge von 10-14 mm. besitzen eine rostgelbe bis röthlich-kastanien-braune Färbung und rostgelbe Beine.

Ein mir aus Borneo vorliegendes ♀ stimmt mit den Java-Exemplaren vollständig überein.

Panesthia ferruginipes, Brunner von Wattenwyl.

Panesthia ferruginipes, Brunner. Ann. Mus. Genova, (2), Vol. XIII, p. 53 (1893).

Panesthia ferruginipes, Krauss. Semon Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 754 (1903).

Panesthia ferrugin[e]ipes, Kirby. Syn. Cat. Orth. Vol. I, p. 202 (1904).

Statura minore. Aptera. Atra, tota impresso-punctata. antennis pedibus and cercis ferrugineis. Pronotum parvum, planum, margine antico rotundato, haud emarginato, tuberculis nullis. Femora antica inermia. Lamina supraanalis multicrenulata. ♂ —Patria?

long. corporis	♂	18·5 mm.
long. pronoti		5 mm.
lat. pronoti		7·5 mm.

Brunner's specimen was from an unknown locality, but Krauss obtained a ♀ of the same species from Tjibodas the measurements of which are as follows:

long. corporis	♀	25 mm.
long. pronoti		5 mm.
lat. pronoti		9 mm.

Hab: Tjibodas, Java (Krauss).

Panesthia wallacei, Wood-Mason (Plate II, fig. 12).

Panesthia wallacei, Wood-Mason. J. As. Bengal, Vol. XLV, part 2, p. 189 (1876); A. M. N. H. (4), Vol. XIX, p. 117 (1877).

Panesthia wallacei, Saussure. Rev. Suisse Zool. Vol. III, p. 323 (1895).

Panesthia wallacei, Kirby. Syn. Cat. Orth. Vol. I, p. 204 (1904).

Aterrima, nitidissima. Pronoto ut in *P. morione*, sed nitidiore et distinctius crebriusque punctato. Abdomine sparsim punctulato, punctis apicem versus sensim frequentioribus ac paullo majoribus; segmento ultimo marginibus integro angulisque posticis vix producto; lamina supraanali disco pare fulvo-pilosa, postice rotundata, tota integra, dentibus lateralibus nullis; lamina subgenitali confertim grosse punctata. Cercis tumidis, fulvo-pilosis. Tegminibus alisque pene ut in *P. morione*; abdominis apicem longe superantibus; venarum omnium parte apicali perspicua utrinque pallida, subhyalina; illorum vena anali recta impressa hyalina. Femoribus anticis basin versus bidentatis.

long. corporis	♂	36·5 mm.
long. pronoti		9·7 mm.
lat. pronoti		14 mm.
long. tegminum		40 mm.
long. alarum		35 mm.
long. abdom.		18 mm.
lat. abdom.		16 mm.

A single ♂ from Sinkep Island, near Singapore.

I refer to this species two specimens (♂ and ♀) which I took on Gunong Kledang, near Ipoh, Perak, March 1898. Its femora, however, bear three spines each. The dimensions are as follows:

total length	42 mm.
body, length	34 mm.
pronotum, length	10 mm.
pronotum, breadth	12·5 mm.
tegmina, length	33 mm.

Hab; Sinkep Island, near Singapore (Wood-Mason). Gunong Kledang, Perak (Raffles Museum).

Panesthia hilaris, Kirby.

Panesthia hilaris, Kirby. A. M. N. H. (7), Vol. XI, p. 413 (1903); Syn. Cat. Orth. Vol. I, p. 204 (1904).

♀. Head smooth, black, face with a few fine punctures. eyes, ocelli and antennal pits yellow, lower mouth parts reddish, antennæ black, with a ring formed of two yellow joints at three fourths of their length; thorax above dark chestnut-brown, shading into blackish in front, except at the sides; metathorax light reddish; abdomen mostly black; under surface and legs mostly reddish chestnut. Prothorax with a rounded concavity on the frontal margin, leaving the vertex visible; front of prothorax sparingly punctured, with three shallow carinæ, the middle one very fine, converging behind, where a shallow lyrate depression sparingly punctured, separates the front of the pronotum from the slightly raised and more thickly punctured hinder part. Front femora with a terminal spine beneath, and a preceding one on the left femur; pulvilli yellow. Abdomen with large depressed punctures; the terminal plate with larger and fewer punctures, the margin somewhat flattened, the extremity rounded. Tegmina yellowish hyaline, the basal third and a spot on the middle of the costa of the right tegmen, corresponding to a stripe on the left tegmen not reaching the inner margin; wings yellowish hyaline, darker towards the base, and lurid towards the costa.

Long. corp. 32 mm.; exp. tegm. 62 mm.—Sandakan (B. N. Borneo).

According to Kirby this species is allied to *P. necrophoroides*, Walker, *mandarinea*, Saussure, etc., but differs from them in the colour of the antennæ and in the rounded terminal plate.

I refer to this species a specimen (♂) which I obtained at Changi, Singapore, August 1896. It agrees with Kirby's description by the rounded terminal plate of the abdomen and the terminal spine of the front femora, but does not show an additional preceding spine on the left femur. Its tegmina are variegated as follows: base dark black, turning gradually into brown, and, at one fourth the distance from the apex, abruptly

into pale hyaline. The anterior dark portion of the tegmina is in its middle nearly entirely interrupted by a lighter patch on each tegmen which two patches, however, do not quite meet in the middle line.

Its dimensions are:

total length	♂	30 mm.
pronotum, length		8·3 mm.
pronotum, breadth		10·3 mm.
tegmina, length		21 mm.

Hab: Sandakan, B. N. Borneo (Kirby).—Changi, Singapore (Raffles Museum).

Panesthia transversa, Burmeister.

Panesthia transversa, Burmeister. Handb. Ent. Vol. II, p. 513 (1838).
Panesthia transversa, Brunner. Ann. Mus. Genova, (2) Vol. XIII, p. 51 (1893).
Panesthia transversa, Saussure. Rev. Suisse Zool. Vol. III, p. 321 (1895).
Panesthia transversa, Kirby. Syn. Cat. Orth. Vol. I, p. 203 (1904).

Brunner's description is as follows: Antennæ apice flavæ. Pronotum ♂ margine antico late et profunde sinuato, sinu medio tuberculato, angulis in cornua incurva productis, ♀ margine antico truncato. Elytra atra, in tertia parte basali fascia obliqua, lata, pallide flava ornata. Pedes atri. Femora antica subtus inermia. Segmentum abdominale dorsale septimum margine postico integro, limbato. Lamina supraanalis indistincte crenulata. ♂ ♀.

long. corporis	♂	34 mm.	♀	30 mm.
long. pronoti		6·5 mm.		5·8 mm.
lat. pronoti		12 mm.		10·5 mm.
long. elytrorum		30 mm.		25 mm.

Hab: Java (Kirby). Burmah (Brunner; Kirby).

Panesthia ornata, Saussure.

Panesthia ornata, Saussure. Mém. Soc. Genève, Vol. XXIII, p. 152, pl. X, fig. 54 (1872).
Panesthia ornata, Kirby. Syn. Cat. Orth. Vol. I, p. 203 (1904).

Minor, atra; pronoto antice emarginato; elytris flavido-testaceis, basi macula minore, apice macula magna, necnon campi marginalis basi, nigris; alis testaceis, postice apiceque fuscis; femoribus inermibus. ♂.

Longueur du corps ♀ 20 mm.;
Longueur de l'elytre 16 mm.;
Longueur du pronotum 4·2 mm.
Largeur du pronotum 7 mm.

♂. Petite espèce, de forme assez grêle. Corps noir. Tête peu débordante; chaperon avec une bande testacée. Antennes noires.

Pronotum chiffonné, semé de fines ponctuations; le bord antérieur échancré au-dessus de la tête; les angles de l'échancrure arrondis; le fond de l'échancrure formant une ligne droite, suivi un peu en arrière d'un pli transversal surmonté d'une faible dent triangulaire; le sillon en V suivi en arrière de deux granules; les côtes du pronotum assez fortement ponctués.

Elytres ne dépassant pas l'abdomen, lisses, d'un jaune pâle, ornés à la base d'une tache noire ovale et ayant leur seconde moitié presque couverte par une grande tache noire ovoïde qui est cependent entourée par la couleur jaune du fond qui suit les bordes; le champ marginal occupé à la base par une tache noir.

Ailes ayant le champ antérieur testacé, de la couleur des élytres; leur seconde moitié couverte par une grande tache brune pyriforme à pointe dirigée en dedans, mais laissant l'extrême bord apical testacé. Le nervure humérale bifurquée; la veine discoïdale portant 3 branches apicales. Le champ postérieur enfumé, à nervures brunes, le bord antérieur bruni vers l'extrémité, l'échancrure anale très-marquée.

Pattes noires. Cuisses antérieures inermes.

Abdomen semé de ponctuations; le dernier segment dorsal ayant ses bords latéraux entiers, terminés par une épine; plaque suranale faiblement crénelée sur son bord postérieur.

Hab: Java.—(La Chine?).

Panesthia sinuata, Saussure.

Panesthia sinuata, Saussure. Rev. Suisse Zool. Vol. III, p. 318 (1895).
Panesthia sinuata, Kirby. Syn. Cat. Orth. Vol. I, p. 203 (1904).

♂ minuta, nigra. Pronotum utrinque crasse punctatum, tuberculis centralibus trigonalibus, acutis; area depressa antica utrinque granulata, in medio carinulata, margine anteriore late sinuato, angulis rotundatis, carina praemarginali instructo; marginibus lateralibus subrectis, (utrinque sinu notatis); cum marginibus anterioribus angulum obtusum efficientibus; angulis posticis obtusangulis. Elytra condite explicata, basi punctata. Femora anteriora spinis nullis. Abdomen crassissime impresso-punctatum; ii segmenti dentes apicales parum acuti, divergentes scilicet margine laterali segmenti ad dentem distincte obtusangulatim sinuato. Lamina supraanalis margine obtusissime obsolete undato, lobulis 4; angulis lateralibus obtusis. Venter apice crassissime punctatus.—Long. 24·5; pronot. 5·8; latit. 8·5; elytr. 20 mm.

Hab: Singapore.

Espèce voisine de la *serralissima*; s'en distinguant par la forme du pronotum, dont le lobe antérieur est plus prolongé et n'offre pas de dents corniformes séparées par un bord droit. Les angles postérieurs du pronotum sont aussi moins arrondis. Le plaque suranale est moins crénelée (elle offre dans la *serra-*

lissima ♀ lobes arrondis). Enfin les bords latéraux du 7me segment dorsal, bien que formant avec les dents latérales un angle rentrant obtus, ne sont pas échancrés à la base de la dent comme chez la *serratissima*.—De taille un peu plus grande que la *punticollis*, Stål, des Philippines, trop brièvement décrite pour être reconnue avec certitude.—Pourrait être le mâle de la *nigrita*; les segments 6me, 7me de l'abdomen offrant la même sculpture que chez cette espèce. Le bord de la plaque suranale est seulement un peu ondulé au milieu, formant 4-5 crénelures.

Panesthia bramina, Saussure.

Panesthia bramina, Saussure. Rev. Suisse Zool. Vol. III, p. 322 (1895).
Panesthia bramina, Kirby. Syn. Cat. Orth. Vol. I, p. 204 (1904).

♀. Nigra vel rufescens. Pronotum transverse ellipticum, breve, dense cribroso- punctatum, tuberculis nullis; margine anteriore truncato, in medio minute subinciso, linea elevata (♀) nulla. Elytra angusta, abdominis longitudine, basi castanea, dehinc vitta lata transversa completa sordide decolore, apicem campi analis tegente; dimidia parte apicali elytri subhyalina, ad vittam luteam fusco-ferruginescente. Alæ fusco-ferrugineæ, tertia parte apicali hyalinæ. Femora anteriora haud spinosa. Abdomen crasse remote impresso-punctatum. Septimi segmenti anguli breviter spinosi. Lamina supraanalis densius punctata, margine postico rotundato-crenulato, utrinque angulo hebetato prominulo. Long. 35; pronot. 7; latit. 12; elytr. 29·5 mm.

Var Nigra, vitta elytrorum distinctius delineata, canescens?

♂ Pronotum antice leviter sinuatum.

Hab: India; Johore.

Cette espèce est un peu plus grande que la *P. transversa*: elle en diffère par son pronotum non échancré et par la livrée de ses organes du vol. La bande pâle des élytres est beaucoup plus large que chez la *transversa*, peu limitée à son bord distal mais complète jusqu' au bord sutural, et couvrant les $\frac{2}{3}$ du champ anal.

Genus ***MIOPANESTHIA,*** Saussure.

Saussure. Rev. Suisse Zool. Vol. III, p. 323 (1895).

Pronotum anterius haud incisum; ejus sulci retro-evanidi; depressio anterior elongata, trans discum anguste retro-producta, parum profunda; vel discus anterius excavatus. Abdomen haud crasse punctatum; segmentorum prozona polita et sulco transverso exarata, plerumque obtecta. Anguli segmentorum 6^{i}, 7^{i} spiniformiter retro-producti. Pedes subgraciles; spinis tibiarum gracilibus, elongatis. Lamina infragenitalis ♂ sat detecta, margine postico arcuato.

Miopanesthia stenotarsis, Saussure.

Miopanesthia stenotarsis, Sauss. Rev. Suisse Zool. Vol. III, p. 325, pl. IX, fig. 2 (1895).

Miopanesthia stenotarsis, Krauss. Semon Zool. Forsch. Austr. Mal. Arch. Vol. V, p. 748 (1903).

Miopanesthia stenotarsis, Kirby. Syn. Cat. Orth. Vol. I, p. 205 (1904).

♂. Minuta, gracilis, nigra; antennis, ore, ocellis pedibusque rufis. Caput prominulum, politum. Pronotum nitidum, politum, depressum, haud gibbosum, subtiliter sparse punctulatum, tuberculis nullis; margine antico late truncato, plano, haud reflexo. Disci impressio angusta, elongata, retro-acuminata, haud rugosa; pars postica pronoti in medio foveolis 2 ovatis transversis notata. Margines laterales valde arcuati, angulis rotundatis. Elytra sat angusta, abdominis longitudine vel abdomen paulum superantia: castanea, venosa, basi punctata. Alæ fuscæ, apice parabolice rotundatæ. Pedes graciles. Femora antica bispinosa. Tibiarum spinæ graciles ac longæ. Tarsi gracillimi; posticorum metatarsus reliquis articulis aequilongus. Abdomen supra ac subtus sat dense, haud grosse punctatum, segmentis 2-5 supra basi prozonam angustam politam et sulcum transversalem obferentibus. Segmenta 6m, 7m angulis spiniformiter productis, spinis 6i quam illæ 7i longioribus. Lamina supraanalis minuta, brevis, transversa, polita, vix punctata, margine postico leviter arcuato, utrinque lobo obsoleto. Cerci trigonales acuti. Ultimum segmentum ventrale truncatum. Lamina infragenitalis polita, parum prominula, margine arcuato.—Java.

long. corp.	♂ 21 mm.
elytra	18 mm.
pronotum	4·6 mm.
latit. pron.	6·3 mm.
latit. abd.	8·5 mm.

A specimen (♂) which I took on Mt. Poe, Sarawak, 3500′, April 1913, is probably referable to this species. The spines of the 6th and 7th segments are well marked. Its dimensions are as follows:

total length	♂ 30 mm.
body, length	25 mm.
pronotum, length	7 mm.
pronotum, breadth	9 mm.
tegmina, length	25 mm.

Hab: Java (Saussure). Tjibodas, Java (Krauss). Mt. Poe, Sarawak (Raffles Museum).

Miopanesthia discoidalis, Saussure.

Miopanesthia discoidalis, Sauss. Rev. Suisse Zool. Vol. III, p. 326 (1895).

Miopanesthia discoidalis, Kirby. Syn. Cat. Orth. Vol. I, p. 205 (1904).

♀. Ovata, convexa, nitida, fusco-nigra vel rufescens; antennis pedibusque rufo-testaceis. Thorax et abdominis basis politi, subtiliter sparse punctulati. Pronoti margo anterior reflexus, minute trigonali-incisus: angulis incisurae trigonali-erectis. Depressio anterior retro rotundato-producta; disco propter hoc antice depressionem rotundatam obferente; haec marginibus et linea media subtiliter lineatim granulosis: area antica striolato-rugulosa: anguli postici fere rectanguli. Abdomen posterius cribroso-punctatum, angulis 6i et 7i segmenti breviter acute productis. Lamina supraanalis margine toto denticulato (denticulis 12-14). Femora antica subtus inermia. Long. 19 mm. (immatura ? aptera).

Hab: Java.—India.

In imaginibus pedes verisimiliter sunt fusci, corporis colore.

Genus ***MYLACRINA,*** Kirby.

Kirby. A. M. N. H. (7), Vol. XI, p. 414 (1903).

♀. Front of pronotum bordered by a raised rounded ridge, deeply and triangularly excavated in the middle; the surface rugose, the sides thickly punctured; two broad converging ridges running towards the raised hinder portion, which is furnished with a large tubercle on each side in front, and two in the middle; halfway between the front and hinder tubercles is a shallow depression. Upper surface of body sparingly punctured, except on the sides; but the sixth segment of the abdomen with large and numerous punctures; the seventh coarsely, and the terminal plate more finely, rugose. Fifth and sixth segments of the abdomen with distinct, though small, projecting lateral angles, that on the seventh larger, and slightly oblique, seventh segment twice slightly indented; terminal plate with numerous short blunt teeth. Tegmina lateral, subtriangular, rounded at the extremity, not much longer than the pronotum, and with large and numerous punctures. Wings not visible. Front femora with a strong curved spine at the extremity of the inner carina. Cerci short, rounded, set with fine reddish hair.—Differs from typical *Dicellonotus*, *Macropanesthia* etc. in the presence of short tegmina, in the lateral projections on segments 5 and 6, etc.

Mylacrina wrayi, Kirby.

Mylacrina wrayi, Kirby. A. M. N. H. (7), Vol. XI, p. 414 (1903); Syn. Cat. Orth. Vol. I, p. 205 (1904).

Long. corp. 38 mm.; lat. 17 mm.

♀. Black; antennae, knees and tarsi dark ferruginous, scape of antennae, mouth-parts, and pulvilli lighter reddish, upper part of head black, smooth and shining, with a few very fine punctures.

Hab: Perak (Wray).

GEOGRAPHICAL DISTRIBUTION

of the Malayan Species of Blattidæ

	Malay Peninsula	Sumatra	Java	Borneo	Other localities
Sub-family 1. ECTOBINÆ.					
Theganopteryx apicigera, Walker		×	×	×	
Hemithyrsocera histrio, Burmeister	×	×	×	×	Celebes.
„ *lateralis*, Walker	×				India; Burmah; Siam
„ *palliata*, Fabricius	×	×			India; Indo-China; China.
„ *soror*, Brunner			×		Celebes.
„ *tessellata*, Rehn	×				
Anaplecta obscura, Shelford	×				
„ *malayensis*, Shelford	×				
„ *borneensis*, Shelford				×	
„ *javanica*, Saussure			×		
Sub-family 2. PHYLLODROMIINÆ.					
Pseudothyrsocera scutigera, Walker				×	
„ *pica*, Walker	×	×			

	Malay Peninsula	Sumatra	Java	Borneo	Other localities
Pseudothyrsocera ruficollis, Shelford	×			×	
„ *montana*, Shelford				×	
„ *bicolor*, Shelford				×	
„ *moultoni*, n. sp.				×	
Ischnoptera reversa, Walker	×			×	
„ *excavata*, Shelford				×	
„ *cavernicola*, Shelford				×	
„ *montis*, Shelford				×	
„ *ridleyi*, Shelford	×				
Phyllodromia bivittata, Serville	?	?	?	×	Cosmopolitan.
„ *triangulitер-vittata*, Brunner				×	
„ *latius vittata*, Brunner			×		
„ *longe-alata*, Brunner				×	
„ *funebris*, Walker				×	
„ *hamifera*, Walker				×	
„ *ruficeps*, Kirby	×				S. Africa.
„ *aliena*, Brunner	×				Burmah.
„ *contingens*, Walker	×			×	
„ *germanica*, Linné	×	×	?	×	Cosmopolitan.
„ *irreguliter-vittata*, Brunner			×	×	
„ *secura*, Krauss			×		
„ *virescens*, Walker				×	
„ *laterifera*, Walker				×	
„ *variegata*, Brunner			×		
„ *puncticollis*, Brunner				×	
„ *notulata*, Stål	×		×	×	Tahiti.
„ *polygrapha*, Walker				×	Siam.
„ *anceps*, Krauss					
„ *obtusifrons*, Walker				×	
„ *nebulosa*, Shelford				×	
„ *megaspila*, Walker			×	×	

Phyllodromia marmorata, Walker	×					
„ *picturata*, Shelford	×					
„ *hewitti*, Shelford				×		
„ *elegans*, Walker				×		
„ *picteti*, Fritze			×			
„ *supellectilium*, Serville	?	?	?	?		Christmas I.; Cosmopolitan.
„ *nimbata*, Shelford				×		
„ *4-punctata*, n. sp.	×					
Duryodana palpalis, Walker				×		
Pseudophyllodromia pulcherrima, Shelford	×			×		
„ *laticeps*, Walker	×			×		
Ceratinoptera sundaica, Fritze			×			
„ *fulva*, Brunner			×			
Allacta parva, Shelford				×		
Sub-family 3. NYCTIBORINÆ.						
None.						
Sub-family 4. EPILAMPRINÆ.						
Phlebonotus pallens, Serville			×			Ceylon; Bengal; Assam.
Morphna maculata, Brunner	×		?	×		
„ *badia*, Brunner	×	×	×	×		
Homalopteryx adusta, Walker				×		
„ *major*, Saussure			×			
Compsolampra liturata, Serville			×			China.
Apsidopis wallacei, Shelford				×		
„ *oxyptera*, Walker				×		
„ *cyclops*, Saussure				×		
Pseudophoraspis nebulosa, Burmeister	×	×	×	×		
„ *miranda*, Shelford				×		
Rhabdoblatta buqueti, Serville			×			
„ *javanica*, Saussure			×			
„ *pfeiferæ*, Brunner		×		×		
„ *structilis*, Rehn		×				

	Malay Peninsula	Sumatra	Java	Borneo	Other localities
Rhabdoblatta parvicollis, Walker				×	
,, *procera*, Brunner			×		
,, *obtecta*, n. sp.	×				
Epilampra quadrinotata, Walker				×	
,, *plena*, Walker				×	Celebes; N. Guinea.
,, *puncticollis*, Walker				×	
,, *varia*, Walker				×	
,, *imitans*, Brunner	?				Tenasserim.
,, *dytiscoides*, n. sp.	×				
,, *saravacensis*, Shelford				×	
,, *goliath*, Shelford				×	
,, *flavomarginata*, Shelford				×	
,, *circumdata*, n. sp.	×				
,, *inclarata*, Walker				×	
,, *lurida*, Burmeister		×	×	×	India; Celebes.
,, *ridleyi*, Kirby	×				
,, *deflexa*, Saussure			×		
,, *geminata*, Brunner				×	
,, *albina*, Saussure			×		
,, *lævicollis*, Saussure			×		
,, *trongana*, Rehn	×				
,, *moloch*, Rehn	×				
Rhicnoda rugosa, Brunner	×	×	×	×	Pegu; Tenasserim; Halmahera.
,, *natatrix*, Shelford				×	
,, *spinulosa*, Brunner			×		
,, *desidiosa*, Rehn	×				
Calolampra pedisequa, Rehn	×				
Sub-family 5. BLATTINÆ (=PERIPLANETINÆ).					
Platyzosteria soror, Brunner	×			×	Formosa; Amboina; etc.

Cutilia nitida, Brunner	×				Formosa; Philippines; Amboina; etc.
Methana magna, Shelford				×	
„ *pallipalpis,* Serville		×	×		Australia.
„ *hosei,* Shelford				×	
„ *semimarginalis,* n. sp.				×	
Dorylæa flavicincta, De Haan		×	×	×	Madagascar.
Blatta orientalis, L.	×	×	×	×	Cosmopolitan.
„ *concinna,* De Haan	×		×		Mal. Arch; Hongkong; Japan; Australia.
Stylopyga rhombifolia, Stoll	×			×	Cosmopolitan.
„ *picea,* Brunner	×				Nicobars.
„ *semoni,* Krauss			×		
„ *proposita,* Shelford			×		
Periplaneta americana, L.	×	×	×	×	Cosmopolitan.
„ *australasiæ,* Fabricius	×	×	×	×	Cosmopolitan.
„ *crassa,* Karny				×	
„ *lata,* Herbst				×	
„ *spinosostylata,* Krauss			×		
„ *malaica,* Karny				×	
„ *regina,* Saussure	×				
„ *truncata,* Krauss		×			New Britain; Brazil; Tenerife; 'Cosmopolitan.'
„ *robinsoni,* n. sp.		×			
Homalosilpha ustulata, Burmeister	×	?	×	?	India.
„ *decorata,* Serville				×	
Eroblatta borneensis, Shelford				×	
Thyrsocera spectabilis, Burmeister	×				Ceylon; Nepal.
„ *speciosum,* Walker	?	?	?	?	'Eastern Archipelago.'
Miroblatta petrophila, Shelford				×	
Archiblatta hoevenii, Vollenhoven	×	×	?	?	
Catara rugosicollis, Brunner	×	×	×	×	
„ *minor,* Krauss			×		
Sub-family 6. PANCHLORINÆ.					
Rhyparobia maderæ, Fabricius.	?	?	×	?	Cosmopolitan.
Leucophæa surinamensis, L.	×	×	×	×	Cosmopolitan.
„ *striata,* Kirby	×				

	Malay Peninsula	Sumatra	Java	Borneo	Other localities
Leucophæa nigra, Brunner		×	×		Burmah.
Nauphoeta cinerea, Olivier	×	×	?	?	Cosmopolitan.
Sub-family 7. BLABERINÆ.					
None.					
Sub-family 8. CORYDINÆ.					
Corydia petiveriana, L.	?	?	?	?	Ceylon; India; 'East Indies.'
„ *cærulea*, Shelford				×	
„ *forceps*, n. sp.	×				
„ *maxwelli*, n. sp.	×			×	
Homopteroidea nigra, Shelford				×	
Holocompsa debilis, Walker				×	
Polyphaga sumatrensis, Shelford		×			
Dyscologamia capucina, Brunner				×	Tenasserim.
„ *cesticulata*, Saussure	×			×	
„ *pilosa*, Walker			×		
Sub-family 9. OXYHALOINÆ.					
Diploptera dytiscoides, Serville	×				Ceylon; India; Burmah; Australia; etc.
Chorisoneura lativitrea, Walker				×	Cambodia.
Areolaria signata, Shelford				×	
„ *sumatrana*, Shelford		×			
„ *fieberi*, Brunner	×		×		
„ *consocia*, Walker	×				
Sub-family 10. PERISPHÆRINÆ.					

Paranauphœta circumdata, De Haan		×		×	Assam; Cambodia.
„ *basalis*, Serville	×	×	×		
„ *brunneri*, Shelford				×	
„ *lyrata*, Burmeister	×	×	×	×	India; Philippines; Celebes.
„ *bilunata*, De Haan			×		
„ *javanica*, Saussure			×		
„ *atra*, Shelford		×		×	
Glyptopeltis coulaniana, Saussure			?		
„ *biguttata*, Saussure			×		
Perisphaeria armadilla, Serville	×		×		
„ *glomeriformis*, Lucas	×				Cochin China; Philippines.
„ *lucasiana*, Saussure and Zehntner			×		
Pseudoglomeris flavicornis, Burmeister			×		S. India.
„ *flexicollis*, Walker	×				
Sub-family 11. PANESTHINÆ.					
Salganea morio, Burmeister	×	×	×	×	Ceylon; Amboina.
„ *rugulata*, Saussure			×		
Panesthia javanica, Serville	×	×	×	×	Burmah; Cambodia; Philippines.
„ *ruficeps*, Kirby					Christmas Island.
„ *angustipennis*, Illiger		×		×	Philippines; Amboina.
„ *mandarinea*, Saussure	×			×	China.
„ *biglumis*, Saussure			?		India; Sikkim.
„ *polita*, Krauss			×	×	
„ *ferruginipes*, Brunner			×		
„ *wallacei*, Wood-Mason	×				
„ *hilaris*, Kirby	×			×	
„ *transversa*, Burmeister			×		Burmah.
„ *ornata*, Saussure			×		China?
„ *sinuata*, Saussure	×				
„ *bramina*, Saussure	×				India.
Miopanesthia stenotarsis, Saussure			×	×	
„ *discoidalis*, Saussure			×		India.
Mylacrina wrayi, Kirby	×				

Remarks on the Geographical Distribution of the Blattidæ.

The most striking fact in the above table is the large number of species peculiar to the Malayan region, viz. 131 out of 184 species. Of the species which occur beyond this region, eleven are cosmopolitan, and as to be expected, they chiefly belong to the sub-families of the Blattinæ and Panchlorinæ and include such well-known forms as *Blatta orientalis, Stylopyga rhombifolia, Periplaneta americana, P. australasiæ, Leucophaa surinamensis* and *Nauphæta cinerea.*

Omitting the cosmopolitan forms we find that 30 Malayan species have so far been recorded from Ceylon, the mainland of Asia (India, Burmah, Siam, Indo-China and China) and Formosa; six from the Philippines (viz. *Cutilia nitida,* Brunner; *Nauphæta cinerea,* Olivier; *Paranauphæta lyrata,* Burmeister, *Perisphæria glomeriformis,* Lucas; *Panesthia javanica,* Serville; and *Panesthia angustipennis,* Illiger); and fourteen from Celebes, Amboina, Halmahera, New Guinea, Australia etc., showing thus a considerably closer affinity of the Blattid fauna of Malaya* with that of the mainland than with that of the islands to the East. Specially striking is the fact that there are so few species common to Malaya and the Philippines. But the Philippines show in this respect no closer relationship to other neighbouring countries and islands. Kirby, in his 'Synonymic Catalogue' enumerates 62 species of Blattidæ from the Philippines. Adding to these three cosmopolitan species (*B. orientalis, P. americana* and *P. australasiæ*) which, no doubt, occur there as well, though not expressly mentioned by Kirby, we get a Blattid fauna of 65 species in the Philippines of which, according to Kirby's list, not less than 55 species are peculiar to those islands. (24 species of these were described by Stål). The seven species which occur outside the Philippines (besides the above mentioned three cosmopolitan forms) are:

Homaloptera macassariensis, De Haan, from Amboina and Macassar.

Cutilia (*Melanozosteria*) *nitida*, Brunner, from Malaya, Formosa, Amboina, N. S. Wales.

Nauphæta cinerea, Olivier, from Malaya, Madagascar, Polynesia, Central America, etc.

Paranauphæta lyrata, Burmeister, from Malaya, India and Celebes.

---

*'Malaya' is here taken to include the Malay Peninsula, Sumatra, Java and Borneo.

Perisphæria glomeriformis, Lucas, from Malaya and Cochin China.
Panesthia javanica, Serville, from Malaya, Burmah and Cambodia.
Panesthia angustipennis, Illiger, from Malaya and Amboina.

It is hardly necessary to remind the reader that Wallace (Geographical Distribution of Animals, 2 Vols., 1876) divided the Oriental region into four sub-regions:

(1) the Indian sub-region, comprising Central and Northern India;

(2) the sub-region of Ceylon and Southern India;

(3) the Indo-Chinese sub-region, including Burmah, Siam, Indo-China and Formosa;

(4) the Indo-Malayan sub-region, with the Malay Peninsula, Sumatra, Java, Borneo and the Philippines.

However, the geographical distribution of the Blattidæ hardly justifies us to include the Philippines in this last sub-region, and the study of other groups of animals militates against Wallace's views too. Thus Lydekker (Geographical History of Mammals, 1896) says "the discovery of a very peculiar mammalian fauna in the mountains of Luzon clearly proves their right to form a sub-region apart." Still W. L. Sclater and P. L. Sclater (The Geography of Mammals, 1899) include again the Philippines in the Malayan sub-region.

This brings us to the much discussed question of the validity of 'Wallace's line,' a line of demarcation starting from between Bali and Lombok, continuing between Borneo and Celebes, and ending to the East of the Philippines, which was supposed sharply to divide the Oriental from the Australian region. The most recent attempt to unravel this question is by Dr. P. N. van Kampen* who in three instructive maps indicates the distribution of Fresh water Fishes, Amphibians and Mammals in the East Indian Archipelago, showing that many families, genera and species have a line of their own, crossing the Archipelago in the most diversified directions which, if superimposed upon each other, would turn Wallace's line into a cobweb.

However, it must be understood that my remarks on the Blattid fauna of the Philippines are based merely on the study of literature. I have not yet had an occasion to examine any Philippine collections, and an actual comparison of such with Malayan ones would possibly lead to somewhat different results.

Another interesting point may be drawn attention to in the above table of distribution, viz. which sub-families of the Blattidæ show the largest proportion of species peculiar to Malaya? The

*De Zoogeografie van den Indischen Archipel, door P. N van Kampen. Bijblad Nos. 3 and 4 van het Natur. Tijdschrift voor Nederlandsch-Indië, 1909. Translated by Thomas Barbour in the 'American Naturalist,' Vol. XLV, pp. 537-560 (1911), "The Zoogeography of the East Indian Archipelago."

first place is taken by the Corydinæ. Omitting *Corydia petiveriana*, L., which is only very doubtfully recorded from Malaya, there remain nine species, only one of which has so far been found outside our region, viz. *Dyscologamia capucina*, Brunner, from Tenasserim. They are all very striking forms, several of which are brightly coloured (see the illustrations of *Corydia forceps*, n. sp., pl. VII, fig. 41; and *Corydia maxwelli*, n. sp., pl. II, fig. 10), and are of extreme rarity even within our own region.

Of the Phyllodromiinæ, Epilamprinæ, Oxyhaloinæ and Perisphærinæ 70% to 85% are peculiar to Malaya, whilst the Ectobinæ, Blattinæ, Panchlorinæ and Panesthinæ contain the smallest number of characteristic forms. Of the Blattinæ and Panchlorinæ so many species have followed man in his wanderings, and the Panesthinæ through their usual habitat in rotten logs have had unusual facilities for dispersal by rivers and ocean currents.

The fact that the table of distribution shows most species from Borneo and fewest from Sumatra scarcely requires any explanation. The Bornean Blattid fauna is so well-known through Wallace's and especially Shelford's collections, whilst Sumatra has hardly been worked yet. The number of species recorded within our region is

Borneo	93	species.
Malay Peninsula	67	„
Java	62	„
Sumatra	32	„

Future collections will probably more or less equalize the percentage of species found in the four sub-divisions of Malaya, besides elucidating many other points in the history of this interesting and oldest family of Insects.

BIBLIOGRAPHY.

Annandale, N., Notes on the Fauna of a Desert Tract in Southern India. Part II. Insects and Arachnida. Memoirs, Asiatic Society of Bengal, Vol. I (1905-7), pp. 203-219, 1 pl.

Annandale, N., Notes on the Freshwater Fauna of India. No. III. —An Indian aquatic cockroach and beetle larva. Journal, Asiatic Society of Bengal, 1906, pp. 105-108.

Blanchard, E., Monographie des Phoraspis. Annales de la Société entomologique de France, Vol. VI (1837), pp. 285-297, pls. X and XI.

Blanchard, E., Histoire naturelle des Insectes, Vol. III. Paris, 1840.

Bolivar, Ignacio, Diagnosis de Ortópteros nuevos. Anales de la Sociedad española de Historia Natural, Vol. XIX (1890). pp. 299-334, pl. I.

Brunner von Wattenwyl, C., Nouveau Système des Blattaires. Vienne, 1865.

Brunner von Wattenwyl, C., Prodromus der Europäischen Orthopteren. Leipzig, 1882.

Brunner von Wattenwyl, C., Révision du Système des Orthoptères. Annali del Museo civico di Storia Naturale di Genova, (2). Vol. XIII, pp. 1-230, pls. I-VI (1893).

Brunner von Wattenwyl, C., Orthopteren des Malayischen Archipels, gesammelt von Prof. Dr. W. Kükenthal in den Jahren 1893 und 1894. Abhandl. d. Senckenberg. Gesellschaft, Vol. XXIV (1898), pp. 193-288, pls. XVI-XX.

Burr, M., British Orthoptera. The Naturalists' Journal. 68 pp. 1897.

Fabricius, Joh. Christ., Species Insectorum. 2 Vols. Hamburg und Kiel, 1781.

Fritze, Adolf, Orthoptères de l'Archipel malais. Revue Suisse de Zoologie, Vol. VII (1900), pp. 335-340, pl. XVI.

Gerstaecker, A., Ueber das Vorkommen von ausstülpbaren Hautanhängen am Hinterleibe an Schaben. Archiv für Naturgeschichte, Vol. XXVII (1861), pp. 107-115.

Haan, W. de, Bijdragen tot de Kennis der Orthopteren. In: C. J. Temminck, Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen. Leiden, 1839-1844.

Herbst, J. Fr. W., Verzeichniss meiner Insekten-Sammlung. Joh. Casp. Füssly, Archiv der Insektengeschichte. Fasc. VII and VIII. 1786.

Herbst, J. Fr. W., Catalogue critique des Insectes du Cabinet de M. Herbst, in 'Archives de l'Histoire des Insectes, publiées en Allemand par Jean Gaspar Füssly. 1794.

Karny, H., Orthoptera. In: Wissenschaftliche Ergebnisse der Expedition Filchner nach China und Tibet, 1903-1905, Vol. X, part 1, pp. 1-56. Berlin, 1908.

Kirby, W. F., Notes on Blattidæ etc., with Descriptions of new Genera and Species in the Collection of the British Museum, South Kensington. No. I, Annals and Magazine of Natural History, (7), Vol. XI (1903), pp. 404-415.—No. II, ibid. (7), Vol. XII (1903), pp. 273-280.—No. III, ibid. (7), Vol. XII (1903), pp. 373-381.

Krauss, H., Systematisches Verzeichniss der canarischen Dermapteren und Orthopteren mit Diagnosen der neuen Gattungen und Arten. Zoologischer Anzeiger, Vol. XV (1892), pp. 163-171.

Krauss, H. A., Orthopteren aus Australien und dem Malayischen Archipel gesammelt von Professor Dr. Richard Semon. In: Zoologische Forschungsreisen in Australien und dem Malayischen Archipel, Vol. V, pp .743-770, pl. LXVII. Jena, 1894-1903.

Linne, C., Systema Naturæ. Editio X. 1758.

Lucas, H., Quelques Remarques sur le Genre *Perisphæra*, Orthoptère de la famille des Blattaires. Annales de la Société Entomologique de France, (4), Vol. III (1863), pp. 405-409, pl. IX, figs. 10-10*c*.

Olivier, Introduction à l'Histoire naturelle. Encyclopédie méthodique. Histoire naturelle, Vol. IV. Paris, 1789.

Pallas, Spicilegia Zoologica etc. cum tab. aen. fasc. IX. Berolini, 1772.

Rehn, James A. G., Studies in Old World Forficulids or Earwigs, and Blattids or Cockroaches. Proc. U. S. National Museum, Vol. XXVII (1904), pp. 539-560.

Rehn, James A. G., A contribution to the knowledge of the Orthoptera of Sumatra. Bulletin of the American Museum of Natural History, New York, Vol. XXVI (1909), pp. 177-211.

Saussure, H. de, Orthoptères de l'Amérique moyenne. Mémoires pour servir à l'Histoire naturelle du Mexique. Genève, 1864.

Saussure, H. de, Blattarum novarum species aliquot. Revue et Magasin de Zoologie, (2), Vol. XVI (1864), pp. 305-326.

Saussure, H. de, Orthopterum species novæ aliquot. Revue et Magasin de Zoologie., (2), Vol. XX (1868). No. 1, pp. 97-99; No. 2, pp. 354-357.

SAUSSURE, H. DE, Mélanges Orthoptérologiques. Mémoires de la Société de Physique et d'Histoire naturelle de Genève. Vol. XVII (1863); Vol. XX (1869) pp. 227-326, pls. II and III; Vol. XXIII (1872).

SAUSSURE, H. DE, Revision de la Tribu des Hétérogamiens. Revue suisse de Zoologie, Vol. I (1893), pp. 289-318.

SAUSSURE, H. DE, AND LEO ZEHNTNER, Blattidæ. Biologia Centrali—Americana. 1893.

SAUSSURE, H. DE, AND LEO ZEHNTNER, Revision de la Tribu des Perispharriens. Revue suisse de Zoologie, Vol. III (1895), pp. 1-60, pl. I.

SAUSSURE, H. DE, Revision de la Tribu des Panesthiens et de celle des Epilampriens. Revue suisse de Zoologie, Vol. III (1895), pp. 299-364, pl. X.

SAUSSURE, H. DE, Ortotteri. In: Esplorazione del Giuba e dei suoi affluenti compiuta dal Cap. V. Bottego durante gli anni 1892-93 sotto gli auspicii della Società Geografica Italiana. Annali del Museo Civico di Storia Naturale di Genova, (2) Vol. XV (1895), pp. 69-93.

SERVILLE, AUDINET, Histoire naturelle des Insectes.—Orthoptères. Paris, 1839.

SHELFORD, R., Studies of the Blattidæ. Transactions, Entomological Society, London:

1906, pp. 231-280, pls. XIV-XVI.

1906, pp. 487-519, pl. XXX.

1907, pp. 455-470.

1909, pp. 253-327, pls. VII-IX.

SHELFORD, R., Aquatic Cockroaches. The Zoologist (4), Vol. XI (1907), pp. 221-226.

SHELFORD, R., On some new species of Blattidæ in the Oxford and Paris Museums. Annals and Magazine of Natural History, (7), Vol. XIX (1907), pp. 25-49.

SHELFORD, R., Some new Genera and Species of Blattidæ, with Notes on the Form of the Pronotum in the Sub-family Perisphæriinæ. Annals and Magazine of Natural History, (8), Vol. I (1908), pp. 157-177.

SHELFORD, R., On a small collection of Blattidæ in the Naturhistorischen Museum zu Wiesbaden. Jahrbücher d. Nassauischen Vereins für Naturkunde in Wiesbaden, Vol. LXI (1908), pp. 27-38, pl. I.

SHELFORD, R., Orthoptera, Fam. Blattidæ, in 'Genera Insectorum':

Sub-fam. Ectobiinæ, fasc. 55 (1907), pp. 1-13, 1 pl.

Sub-fam. Phyllodromiinæ, fasc. 73 (1908), pp. 1-29, 2 pls.

Sub-fam. Nyctiborinæ, fasc. 74 (1908), pp. 1-5, 1 pl.

Sub-fam. Epilamprinæ, fasc. 101 (1910), pp. 1-21, 2 pls.

Sub-fam. Blattinæ, fasc. 109 (1910), pp. 1-27, 2 pls.

Shelford, R., Note on some Amphibious Cockroaches. Records, Indian Museum, Vol. III (1909), pp. 125-127, 2 figs.

Shelford, R., Descriptions of some new genera and species of Blattidæ (Orth.). Deutsche Entomol. Zeitschrift, 1909, pp. 611-624.

Shelford, R., Descriptions of some new Species of Blattidæ. Annals and Magazine of Natural History, (8), Vol. VIII (1911), pp. 1-13, pl. I.

Shelford, R., Preliminary Diagnoses of some new genera of Blattidæ. Entomologist's Monthly Magazine (2), Vol. XXII (1911), pp. 154-156.

Shelford, R., Mimicry amongst the Blattidæ: With a Revision of the Genus *Prosoplecta*, Sauss., and the Description of a new Genus. Proceedings, Zoological Society, London, 1912, pp. 358-376, pl. XLVIII.

Shiraki, T., Die Blattiden Japans. Annotationes Zoologicæ Japonenses, Vol. VI, part 1 (Nov. 1906), pp. 17-35, pl. II.

Stal, C., Orthoptera nova ex Insulis Philippinis. In: Ofversigt af Kongl. Vetenskaps—Akademiens Förhandlingar, 1877, No. 10, pp. 33-58.

Stoll, Caspar, Représentation exactement colorée d'après nature des Spectres, des Mantes, des Sauterelles, des Grillons, des Criquets et des Blattes. Amsterdam, 1787.

Sulzer, Abgekürzte Geschichte der Insekten. Winterthur, 1776.

Tepper, J. G. O., The Blattariæ of Australia and Polynesia. Transactions, Royal Society, South Australia, 1894, pp. 171-189.

Vollenhoven, Snellen van, Beschrijving eener nieuwe soort von Kakkerlak uit Sumatra, *Archiblatta haroniii*. Tijdschrift voor Entomologie, Vol. V (1862), pp. 106-110, pl. VI, figs. 1 and 2.

Walker, Francis, Catalogue of the Specimens of Blattariæ in the collection of the British Museum. London, 1868.

Walker, Francis, Supplement to the Catalogue of the Blattariæ. London, 1869.

Walker, Francis, Supplement to the Catalogue of the Blattariæ. London, 1871.

Wood-Mason, J., Descriptions of new Species of Blattidæ belonging to the Genus *Panesthia*. Journal, Asiatic Society of Bengal, Vol. XLV, part 2, pp. 189-190 (1876).

INDEX.

(Synonyms are printed in italics.)

adjuncta, Walker (*Nauphoeta*) .. 138
adusta, Walker (*Epilampra*) .. 67
adusta, Walker (Homalopteryx) .. 67
aethiops, Walker (*Panesthia*) .. 149
affinis, Burmeister (*Panesthia*) .. 147
albina, Saussure (Epilampra) .. 88
albina, Saussure (*Hedaia*) 88
aliena, Brunner (Phyllodromia) .. 44
Allacta, Saussure & Zehntner .. 62
americana, Linné (*Blatta*) 108
americana, Linné (Periplaneta) .. 108
Anaplecta, Burmeister 31
Anaplectoidea, Shelford 26
anceps, Krauss (*Blatta*) 50
anceps, Krauss (Phyllodromia) .. 50
angustipennis, Illiger (Blatta) .. 149
apicigera, Walker (*Blatta*) 26
apicigera, Walker (Theganopteryx) 26
Apsidopis, Saussure 69
aranea, Saussure (*Planetica*) .. 116
arborifera, Walker (*Blatta*) .. 52
Archiblatta, Vollenhoven 116
Areolaria, Fieber 134
armadillo, Serville (Perisphaeria) .. 142
aterrima, Eschscholtz (*Blatta*) .. 99
atra, Shelford (Paranauphoeta) .. 140
australasiae, Fabricius (*Blatta*) .. 108
australasiae, Fabricius (Periplaneta) 108

badia, Brunner (*Epilampra*) .. 66
badia, Brunner (Morphna) 66
basalis, Serville (*Blatta*) 138
basalis, Serville (Paranauphoeta) .. 138
bicolor, Shelford (Pseudothyrsocera) 36
biglumis, Saussure (Panesthia) .. 150
biguttata, Saussure (Glyptopeltis) .. 141
bilunata, De Haan (*Blatta*) .. 140
bilunata, De Haan (Paranauphoeta) 140
birmanica, Brunner (Panesthia) .. 151
bivittata, Serville (*Blatta*) 40
bivittata, Burmeister (*Nauphoeta*) 123
bivittata, Serville (Phyllodromia) .. 40
Blaberinae 123
Blatta, Linné 103
Blattinae 97
borneensis, Shelford (Anaplecta) .. 32
borneensis, Shelford (Eroblatta) .. 113
borneensis, Shelford (*Protagonista*) 113
borrei, Saussure (*Epilampra*) .. 77
borrei, Saussure (*Periplaneta*) .. 104
bramina, Saussure (Panesthia) .. 156
brunneri, Kirby (*Blatta*) 104
brunneri, Shelford (Paranauphoeta) 139
buqueti, Serville (*Blatta*) 73
buqueti, Serville (Rhabdoblatta) .. 73

Calolampra, Saussure 95
capensis, Saussure (*Blatta*) 56
capucina, Brunner (Dyscologamia) .. 129
capucina, Brunner (*Homoeogamia*) .. 129
Catara, Walker 117
cavernicola, Shelford (Ischnoptera) 38
celebesa, Walker (*Panchlora*) .. 121
Ceratinoptera, Brunner 61
cesticulata, Saussure (Dyscologamia) 130
Chorisoneura, Brunner 134
cinerea, Olivier (*Blatta*) 123
cinerea, Olivier (Nauphoeta) .. 123
circumdata, De Haan (*Blatta*) .. 138
circumdata, n. sp. (Epilampra) .. 84
circumdata, De Haan (Paranauphoeta) 138
coerulea, Shelford (Corydia) .. 125
concinna, De Haan (Blatta) .. 104
configurata, Walker (*Periplaneta*) .. 112
conformis, Walker (*Epilampra*) .. 72
congrua, Walker (*Epilampra*) .. 72
contingens, Walker (*Blatta*) .. 45
contingens, Walker (Phyllodromia) .. 45
Compsolampra, Saussure 68
consocia, Walker (Areolaria) .. 136
consocia, Walker (*Blatta*) 136
corticum, Serville (*Blatta*) 121
Corydia, Serville 124
Corydinae 123
coxoniana, Saussure (Glyptopeltis) 141
Crassa, Karny (Periplaneta) .. 109
cribrata, Saussure (*Epilampra*) .. 65
cribricollis, Serville (*Blatta*) .. 85
cubensis, Saussure (*Blatta*) 56
Cutilia, Stal 99
cyclops, Saussure (Apsidopis) .. 71

debilis, Walker (Holocompsa) .. 128
decorata, Serville (*Blatta*) 112
decorata, Serville (Homalosilpha) .. 112
decorata, Brunner (*Periplaneta*) .. 105
decorata, Brunner (*Stylopyga*) .. 105
deflexa, Saussure (Epilampra) .. 86
delta, Kirby (*Phyllodromia*) .. 56
deplanata, Walker (*Epilampra*) .. 72
dermestoides, Walker (*Blatta*) .. 136
desidiosa, Rehn (Rhicnoda) .. 94
Diploptera, Saussure 133
discoidalis, Saussure (Miopanesthia) 157
Dorylaea, Stal 102
dotata, Walker (*Epilampra*) .. 66

Duryodana, Kirby 58
Dyscologamia, Saussure 129
dytiscoides, Serville (*Blatta*) .. 133
dytiscoides, Serville (Diploptera) .. 133
dytiscoides, n. sp. (Epilampra) .. 82

Ectobia, Westwood 26
Ectobinae 25
elegans, Walker (*Blatta*) 55
elegans, Walker (Phyllodromia) .. 55
Eleutheroda, Brunner 133
emittens, Walker (*Periplaneta*) .. 108
Epilampra, Burmeister 78
Epilamprinae 63
Eroblatta, Shelford 113
excavata, Shelford (Ischnoptera) .. 38
extenuata, Walker (*Blatta*) 56

ferruginipes, Brunner (Panesthia) .. 152
fervida, Walker (*Epilampra*) .. 79
fieberi, Brunner (Areolaria) .. 136
figurata, Walker (*Blatta*) 56
fissa, Walker (*Pseudomops*) 27
flavicincta, De Haan (*Blatta*) .. 102
flavicincta, De Haan (Dorylaea) .. 102
flavicornis, Brunner (*Derocalymma*) 142
flavicornis, Burmeister (*Perisphaeria*) 143
flavicornis, Burmeister (Pseudoglomeris) 143
flavomarginata, Shelford (Epilampra) 84
flexicollis, Walker (Pseudoglomeris) 144
flexicollis, Walker (*Zetobora*) .. 144
forceps, n. sp. (Corydia) 125
fulva, Brunner (Ceratinoptera) .. 62
fulva, Brunner (*Temnopteryx*) .. 62
funebris, Walker (*Blatta*) 43
funebris, Walker (Phyllodromia) .. 43

geminata, Brunner (Epilampra) .. 87
germanica, Linné (*Blatta*) 45
germanica, Linné (Phyllodromia) .. 45
glomeriformis, Lucas (Perisphaeria) 142
Glyptopeltis, Saussure 141
goliath, Shelford (Epilampra) .. 83
grisea, Burmeister (*Nauphoeta*) .. 123

hamifera, Walker (*Blatta*) 43
hamifera, Walker (Phyllodromia) .. 43
Hemithyrsocera, Saussure 27
heteroclyta, Pallas (*Blatta*) .. 124
heterospila, Walker (*Polyzosteria*) .. 105
hewitti, Shelford (Phyllodromia) .. 54
hieroglyphica, Brunner (*Phyllodromia*) 49
hilaris, Kirby (Panesthia) 153
histrio, Burmeister (Hemithyrsocera) 27
histrio, Saussure (*Periplaneta*) .. 105
histrio, Burmeister (*Thyrsocera*) .. 27
hoevenii, Vollenhoven (Arehiblatta) 116
Holocompsa, Burmeister 127
Homalopteryx, Brunner 66
Homalosilpha, Stal 112
Homopteroidea, Shelford 127
hosei, Shelford (Methana) 101

humeralis, Walker (*Blatta*) .. 45

imitans, Brunner (Epilampra) .. 82
incisa, Walker (*Blatta*) 56
inclarata, Walker (Epilampra) .. 85
inclusa, Walker (*Periplaneta*) .. 108
indica, Burmeister (*Panchlora*) .. 121
indica, Saussure (*Theganopteryx*) .. 28
insolita, Walker (*Periplaneta*) .. 68
intacta, Walker (*Epilampra*) .. 65
inversa, Brunner (*Phyllodromia*) .. 27
irregulariter-vittata, Brunner (Phyllodromia) 46
Ischnoptera, Burmeister 37

jaspidea, Serville (*Blatta*) 72
javanica, Saussure (Anaplecta) .. 32
javanica, Saussure (*Epilampra*) .. 74
javanica, Serville (Panesthia) .. 147
javanica, Saussure (Paranauphoeta) 140
javanica, Saussure (Rhabdoblatta) .. 74
jucunda, Saussure (*Theganopteryx*) 27

laevicollis, Saussure (Epilampra) .. 89
lata, Herbst (*Blatta*) 109
lata, Herbst (Periplaneta) 109
laterale, Walker (*Ellipsidium*) .. 28
lateralis, Serville (*Blatta*) 27
lateralis, Walker (Hemithyrsocera) 28
laterifera, Walker (*Blatta*) 48
laterifera, Walker (Phyllodromia) .. 48
laticaput, Brunner (*Phyllodromia*) .. 60
laticeps, Walker (*Blatta*) 60
laticeps, Walker (Pseudophyllodromia) 60
latius-vittata, Brunner (Phyllodromia) 42
latiritrea, Walker (*Blatta*) 134
lativitrea, Walker (Chorisoneura) .. 134
Leucophaea, Brunner 121
lineaticollis, Bolivar (*Thyrsorera*) .. 27
liturata, Serville (*Blatta*) 68
liturata, Serville (Compsolampra) .. 68
longe-alata, Brunner (Phyllodromia) 42
lucasiana, Saussure and Zehntner (Perisphaeria) 143
lurida, Burmeister (Epilampra) .. 85
lycoides, Walker (Phyllodromia) .. 43
lyrata, Burmeister (*Nauphoeta*) .. 139
lyrata, Burmeister (Paranauphoeta) 139

maculata, Brunner (*Epilampra*) .. 65
maculata, Brunner (Morphna) .. 65
maderae, Fabricius (*Blatta*) .. 120
maderae, Fabricius (Rhyparobia) .. 120
magna, Shelford (Methana) 100
major, Saussure (Homalopteryx) .. 67
major, Brunner (*Thyrsocera*) .. 28
malaica, Karny (Periplaneta) .. 110
malayensis, Shelford (Anapleeta) .. 31
mandarinea, Saussure (Panesthia) .. 149
marmorata, Walker (*Blatta*) .. 53
marmorata, Walker (Phyllodromia) 53
maxwelli, n. sp. (Corydia) 126
megaspila, Walker (*Blatta*) 52

megaspila, Walker (Phyllodromia) .. 52
Methana, Stal 100
minor, Krauss (Catara) 118
Miopanesthia, Saussure 156
miranda, Shelford (*Epilampra*) .. 73
miranda, Shelford (Pseudophoraspis) 73
Miroblatta, Shelford 115
moloch, Rehn (Epilampra) 91
montana, Shelford (Pseudothyrsocera 35
montis, Shelford (Ischnoptera) .. 39
morio, Burmeister (*Panesthia*) .. 145
morio, Burmeister (Salganea) .. 145
Morphna, Shelford 65
moultoni, n. sp. (Pseudothyrsocera) 36
Mylacrina, Kirby 158

natatrix, Shelford (Rhicnoda) .. 93
Nauphoeta, Burmeister 123
nebulosa, Burmeister (*Epilampra*) .. 72
nebulosa, Shelford (Phyllodromia) .. 51
nebulosa, Burmeister (Pseudophoraspis) 72
necrophoroides, Walker (Panesthia) 153
nigra, Shelford (Homopteroidea) .. 127
nigra, Brunner (Leucophaea) .. 122
nigra, Brunner (*Panchlora*) .. 122
nigra, Brunner (*Thyrsocera*) .. 28
nimbata, Shelford (Phyllodromia) .. 57
nitida, Brunner (Cutilia) 99
nitida, Brunner (*Platyzosteria*) .. 99
notulata, Stal (*Blatta*) 49
notulata, Stal (Phyllodromia) .. 49
Nyctiborinae 63

obscura, Shelford (Anaplecta) .. 31
obtecta, n. sp. (Rhabdoblatta) .. 77
obtusifrons, Walker (*Blatta*) .. 51
obtusifrons, Walker (Phyllodromia) 51
occipitalis, Walker (*Panchlora*) .. 121
orientalis, Linné (Blatta) 103
ornata, Serville (*Blatta*) 139
ornata, Saussure (Panesthia) .. 154
Oxyhaloinae 132
oxyptera, Walker (Apsidopis) .. 70
oxyptera, Walker (*Epilampra*) .. 70

pallens, Serville (Phlebonotus) .. 64
pallens, Serville (*Phoraspis*) .. 64
palliata, Fabricius (*Blatta*) 28
palliata, Fabricius (Hemithyrsocera) 28
pallipalpis, Serville (*Kakerlac*) .. 100
pallipalpis, Serville (Methana) .. 100
pallipalpis, Walker (*Periplaneta*) .. 104
palpalis, Walker (*Blatta*) 58
palpalis, Walker (Duryodana) .. 58
palpata, Brunner (*Phyllodromia*) .. 58
Panchlorinae 119
Panesthia, Serville 147
Panesthinae 145
Paranauphoeta, Brunner 137
parva, Shelford (Allacta) 63
parvicollis, Walker (*Epilampra*) .. 76
parvicollis, Walker (Rhabdoblatta) .. 76
pedisequa, Rehn (Calolampra) .. 96
Periplaneta, Burmeister 107
Periplanetinae 97
Perisphaeria, Serville 142
Perisphaerinae 137
petiveriana, Linné (*Cassida*) .. 124
petiveriana, Linné (Corydia) .. 124
petrophila, Shelford (Miroblatta) .. 115
pfeiferae, Brunner (*Epilampra*) .. 75
pfeiferae, Brunner (Rhabdoblatta) .. 75
phalerata, Saussure (*Blatta*) .. 56
Phlebonotus, Saussure .. 63, 64
Phyllodromia, Serville 40
Phyllodromiinae 33
pica, Walker (*Pseudomops*) .. 34
pica, Walker (Pseudothyrsocera) .. 34
picea, Brunner (*Periplaneta*) .. 106
picea, Brunner (Stylopyga) 106
picteti, Fritze (Phyllodromia) .. 55
picturata, Shelford (Phyllodromia) 54
pilosa, Walker (Dyscologamia) .. 131
pilosa, Walker (*Zetobora*) 131
Platyzosteria, Brunner 98
plena, Walker (Epilampra) 79
polita, Krauss (Panesthia) 151
polita, Walker (*Periplaneta*) .. 99
polygrapha, Walker (*Blatta*) .. 49
polygrapha, Walker (Phyllodromia) 49
Polyphaga, Brullé 128
polyspila, Walker (*Epilampra*) .. 65
procera, Brunner (*Epilampra*) .. 77
procera, Brunner (Rhabdoblatta) .. 77
proposita, Shelford (Stylopyga) .. 107
Pseudoglomeris, Brunner 143
Pseudomops, Serville 33
Pseudophoraspis, Kirby 72
Pseudophyllodromia, Brunner .. 59
Pseudothyrsocera, Shelford 33
pulcherrima, Shelford (Pseudophyllodromia) 59
puncticollis, Walker (Epilampra) .. 80
puncticollis, Brunner (Phyllodromia) 49
punctulata, Krauss (Phyllodromia) .. 51

quadrata, Saussure (*Epilampra*) .. 68
quadrimaculata, Walker (*Panesthia*) 147
quadrinotata, Walker (Epilampra) 78
quadriplaga, Walker (*Ischnoptera*) 56
quadri-punctata, n. sp. (Phyllodromia) 57

ramifera, Walker (*Epilampra*) .. 66
regina, Saussure (*Panesthia*) .. 145
regina, Saussure (Periplaneta) .. 110
repanda, Walker (*Periplaneta*) .. 108
reversa, Walker (Ischnoptera) .. 37
Rhabdoblatta, Kirby 73
Rhicnoda, Brunner 92
rhombifolia, Stoll (*Blatta*) 105
rhombifolia, Stoll (Stylopyga) .. 105
Rhyparobia, Krauss 120

ridleyi, Kirby (Epilampra) 86
ridleyi, Kirby (*Heterolampra*) .. 86
ridleyi, Shelford (Ischnoptera) .. 39
robinsoni, n. sp. (Periplaneta) .. 111
ruficeps, Kirby (Panesthia) 148
ruficeps, Walker (Phyllodromia) .. 44
ruficollis, Shelford (Pseudothyrsocera) 35
rugicollis, Walker (*Catara*) 117
rugosa, Brunner (Rhienoda) .. 93
rugosicollis, Brunner (Catara) .. 117
rugosicollis, Brunner (*Deropeltis*) .. 117
rugulata, Saussure (Salganea) .. 146

Salganea, Stal.. 145
saravacensis, Shelford (Epilampra) 83
scita, Walker (*Epilampra*) 72
scutigera, Walker (*Pseudomops*) .. 34
scutigera, Walker (Pseudothyrsocera) 34
secura, Krauss (*Blatta*) 46
secura, Krauss (Phyllodromia) .. 46
semicincta, Walker (*Platyzosteria*) .. 98
seminarginalis, n. sp. (Methana) .. 101
semoni, Krauss (Stylopyga) 106
septem-guttata, Linné (*Cassida*) .. 124
signata, Shelford (Areolaria) .. 135
silpha, Saussure (*Prosoplecta*) .. 133
sinuata, Saussure (Panesthia) .. 155
soror, Brunner (Hemithyrsocera) .. 29
soror, Brunner (Platyzosteria) .. 98
soror, Brunner (*Thyrsocera*) .. 29
speciosum, Walker (*Ellipsidium*) .. 114
speciosum, Walker (Thyrsocera) .. 114
spectabilis, Burmeister (Thyrsocera) 114
spinosostylata, Krauss (Periplaneta) 109
spinulosa, Brunner (Rhienoda) .. 94
stenotarsis, Saussure (Miopanesthia) 157
stolida, Walker (*Periplaneta*) .. 108
striata, Kirby (Leucophaea) .. 122
structilis, Rehn (*Epilampra*) .. 75
structilis, Rehn (Rhabdoblatta) .. 75

Stylopyga, Fischer von Waldheim .. 104
subcincta, Walker (*Periplaneta*) .. 108
subcinctum, Walker (*Ellipsidium*) .. 28
subfasciata, Walker (*Blatta*) .. 56
submarginata, Walker (*Panchlora*) .. 121
subornata, Walker (*Polyzosteria*) .. 108
sumatrana, Shelford (Areolaria) .. 135
sumatrensis, Shelford (Polyphaga) .. 128
sundaica, Fritze (Ceratinoptera) .. 62
supellectilium, Serville (*Blatta*) .. 56
supellectilium, Serville (Phyllodromia) 56
surinamensis, Linné (*Blatta*) .. 121
surinamensis, Linné (Leucophaea) .. 121

tartarea, Stal (*Cutilia*) 99
tessellata, Rehn (Hemithyrsocera) .. 29
tessellata, Rehn (*Thyrsocera*) .. 29
Theganopteryx, Brunner 26
thoracica, Serville (*Kakerlac*) .. 112
Thyrsocera, Burmeister 114
transversa, Burmeister (Panesthia) 154
transversalis, Walker (*Blatta*) .. 56
triangulariter-vittata, Brunner (Phyllodromia) 41
trongana, Rehn (Epilampra) .. 89
truncata, Krauss (Periplaneta) .. 111

ustulata, Burmeister (Homalosilpha) 112
ustulata, Burmeister (*Periplaneta*) .. 112

valvularia, Saussure (*Archiblatta*) .. 117
varia, Walker (Epilampra) 81
variegata, Brunner (Phyllodromia) .. 48
virescens, Walker (*Blatta*) 47
virescens, Walker (Phyllodromia) .. 47

wallacei, Shelford (Apsidopis) .. 69
wallacei, Wood-Mason (Panesthia) .. 152
wrayi, Kirby (Mylacrina) 158

zehntneri, Kirby (*Dorylaca*) .. 102
zonata, De Haan (*Periplaneta*) .. 108

ILLUSTRATIONS.

Plate I.

Fig. 1. *Phyllodromia 4-punctata*, n. sp. .. .. Page 57
2. *Phyllodromia notulata*, Stål. .. .. „ 49
3. *Pseudophyllodromia laticeps*, Walker .. „ 60
4. *Pseudophoraspis nebulosa*, Burmeister .. „ 72
(The specimen figured is an exceptionally small and transparent form).
5. *Epilampra circumdata*, n. sp. .. .. „ 84
6. *Blatta concinna*, De Haan .. .. .. „ 104

Plate II.

Fig. 7. *Leucophæa surinamensis*, Linné ♂ .. .. Page 121
8. do. do. ♀ .. .. „ 121
9. *Nauphæta cinerea*, Olivier .. .. .. „ 123
10. *Corydia maxwelli*, n. sp. ♂ .. .. .. „ 126
11. *Paranauphæta basalis*, Serville .. .. „ 138
12. *Panesthia wallacei*, Wood-Mason .. .. „ 152

Plate III.

Fig. 13. *Hemithyrsocera histrio*, Burmeister .. Page 27
14. *Phyllodromia hamifera*, Walker .. .. „ 43
15. *Pseudophyllodromia pulcherrima*, Shelford.. „ 59
16. *Pseudothyrsocera moultoni*, n. sp. .. .. „ 36
17. *Rhabdoblatta obtecta*, n. sp. .. .. .. „ 77
18. *Rhicnoda rugosa*, Brunner .. .. .. „ 93

Plate IV.

Fig. 19. *Morphna maculata*, Brunner .. .. Page 65
20. *Morphna badia*, Brunner .. .. .. „ 66
21. *Periplaneta americana*, Linné .. .. „ 108
22. *Periplaneta australasiæ*, Fabricius .. .. „ 108
23. *Periplaneta robinsoni*, n. sp. .. .. .. „ 111

Plate V.

Fig. 24. *Stylopya rhombifolia*, Stoll .. .. .. Page 105
25. *Archiblatta hœvenii*, Vollenhoven. (Larva).. „ 116
26. *Catara rugosicollis*, Brunner ♂ .. .. „ 117
27. do. do. ♀ .. .. „ 117
28. *Methana semi-marginalis*, n. sp. .. .. „ 101
29. *Platyzosteria soror*, Brunner .. .. „ 98

Plate VI.

Fig. 30. *Dyscologamia cesticulata,* Saussure .. .. Page 130
31. *Diploptera dytiscoides,* Serville .. .. „ 133
32. *Paranauphœta lyrata,* Burmeister .. .. „ 139
33. *Panesthia mandarinea,* Saussure .. .. „ 149
34. *Panesthia javanica,* Serville (Larva) .. „ 147

Plate VII.

Fig. 35. *Epilampra dytiscoides,* n. sp. ♀ .. .. Page 82
36. *Pseudothyrsocera ruficollis,* Shelford .. „ 35
37. *Pseudothyrsocera pica,* Walker .. .. „ 34
38. *Homalosilpha ustulata,* Burmeister .. .. „ 112
39. *Perispharia armadillo,* Serville ♀ .. .. „ 142
40. *Perispharia glomeriformis,* Lucas ♀ .. „ 142
41. *Corydia forceps,* n. sp. .. .. .. „ 125

1



Phyllodromia 4-punctata.

2



Phyllodromia notulata.

3



Pseudophyllodromia laticeps

4



Pseudophoraspis nebulosa.

5



Epilampra circumdata.

6



Blatta concuma

Valentine Knight, del.

Bemrose, Derby

MALAYAN BLATTIDÆ.

7



Leucophaëa surinamensis. ♂

8



Leucophaëa surinamensis. ♀

9



Nauphoeta cinerea.

10



Corydia maxwelli.

11



Paramaphoëta basalis.

12



Panesthia wallacei.

Valentine Knight, del. Benrose, Derby

MALAYAN BLATTIDÆ.

13.



Hemithyrsocera histrio.

14.



Phyllodromia hamifera.

15.



Pseudophyllodromia pulcherrima.

16.



Pseudothyrsocera moultoni.

17.



Rhabdoblatta obtecta.

18.



Rhicnoda rugosa.

Valentine Knight, del.

Benrose, Derby

MALAYAN BLATTIDÆ.

19.



Morphna maculata.

20.



Morphna badia.

21.



Periplaneta americana.

22.



Periplaneta australasiæ.

23.



Periplaneta robinsoni.

Valentine Knight, del.

Bemrose. Derby

MALAYAN BLATTIDÆ.

26.



Catara rugosicollis ♂

25.



Archiblatta hœvenii.

27.



Catara rugosicollis ♀

28.



Methana semi-marginalis.

24.



Stylopyga rhombifolia.

29.



Platyzosteria soror.

Valentine Knight, del.

Benrose, Derby

MALAYAN BLATTIDÆ.

32.



Paranauphaeta lyrata.

31.



Diploptera dytiscoides.

33.



Panesthia mandarinea.

30.



Dyscologamia vesticulata.

34.



Panesthia javanica.

Valentine Knight, del. Bemrose, Derby

MALAYAN BLATTIDÆ.

35.



Epilampra dytiscoides.

36.



Pseudothyrsocera ruticollis.

38.



Homalosilpha ustulata.

37.



Pseudothyrsocera pica.

39.



Perisphaëria armadillo.

41.



Corydia forceps.

40.



Perisphaëria glomeriformis.

Valentine Knight, del.

Bemrose, Derby

MALAYAN BLATTIDÆ.